THIS WEEK'S National Petroleum NEWS

Index to Coming Meetings

National Oil Show, Sherman Hotel, Chicago, Jan. 19 to 25.

Independent Oil Men's Association of New England, American House, Boston, Mass., Jan. 22, 23, 24.

Oklahoma Oil Jobbers Association, Huckins Hotel, Oklahoma City, Jan. 23, 24.

Wisconsin Petroleum Association, Hotel Pfister, Milwaukee, Jan. 28, 29.

Iowa Petroleum Association, Fort Des Moines Hotel, Des Moines, Ia., Feb. 11, 12.

Ohio Petroleum Marketers Association, Deshler-Wallick Hotel, Columbus, O., Feb. 19, 20, 21.

Michigan Oil Men's Association, Statler Hotel, Detroit, March 19, 20, 21.

American Association of Petroleum Geologists, Roosevelt Hotel, New Orleans, La., March 20, 21 and 22.

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HOWARD BENNETTE, managing director of the Western Petroleum Refiners Association, has held that position for the past six years. During that period he has been of real service to the manufacturing branch of the industry by constantly urging refiners to study the statistics of supply and demand so that they may set up reasonable production schedules and expect to find a ready market in their natural trade territory for their refined oils.

Mr. Bennette is an attorney and a native of Texas. After his graduation from the University of Texas Mr. Bennette began practicing at Conro, Texas. In January, 1919, he was called to Dallas to take charge of the offices of the Texas, Louisiana and Arkansas division of the Mid-Continent Oil & Gas Association. He resigned from the Texas division of the Mid-Continent Association in September, 1923, to take his present position.

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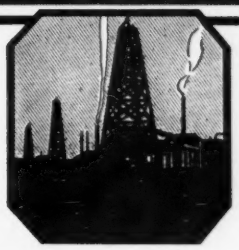

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Vol. 21 CLEVELAND, December 18 No. 51

Ohio Oil Seeks Illinois Pipe Line Co.; Prairie May Acquire Carrier

By Roger B. Stafford
N. P. N. STAFF WRITER

CLEVELAND, Dec. 16

THE Ohio Oil Co. proposes to acquire control of the Illinois Pipe Line Co. which it organized in 1915 and whose capital stock it issued to Ohio Oil Co. stockholders as a 133 1/3 per cent stock dividend.

Reason given for the re-acquisition of the pipe line properties by Ohio is that the proposition is good for both the Ohio and Illinois companies. Their businesses are complementary.

Acquisition of the pipe line company is not affected by the Standard Oil dissolution decree of 1911 as the pipe line company was set up almost four years after the U. S. Supreme Court handed down its famous order. Neither was it necessary to obtain the consent of the Interstate Commerce Commission.

Mergers of pipe line companies and oil companies do not violate the anti-trust laws, was the offhand opinion given at the Department of Justice, according to a Washington dispatch. Nothing official or informal concerning such mergers has been laid before the department, it was said.

Acquisition of the Prairie Pipe Line Co. by the Prairie Oil & Gas Co., its creator, also is considered a likely development of 1930. So far, it has been learned by NATIONAL PETROLEUM NEWS, no definite plan to acquire the pipe line company has been considered by Prairie Oil & Gas Co. but the initiative taken by the Ohio Oil Co. is expected to be followed before many months.

The Ohio Oil Co. proposes to issue $60,000,000 of 6 per cent cumulative preferred stock, shares of $100 par value each, and offer Illinois Pipe Line Co. stockholders three shares of the Ohio Oil preferred for each $100 share of pipe line company stock they hold. Illinois stock has lately been selling in excess of $300 a share. The pipe line stock last Dec. 31 had a book value of $144.77 a share, the Ohio's proposed offer being based on the earning power of the pipe line company.

Stockholders of Ohio Oil will hold a special meeting Dec. 30 at Findlay, O., to vote on the proposal to issue the preferred stock. The present capitalization of Ohio Oil is $60,000,000 of $25 common stock all of which has been issued. The pipe line company's capitalization totals $20,000,000.

The Ohio and Prairie companies divested themselves of their pipe line holdings in 1915 following a ruling by the Interstate Commerce Commission that the pipe line companies were common carriers and were subject to taxation as such.

The Ohio company was threatened further by a ruling in Ohio that the company was liable to a state common carrier tax rate which was higher than the tax rate applied to other corporations. It therefore organized the Illinois company and segregated in it all its trunk and gathering lines. These lines have served mostly the oil fields in which the Ohio company was operating as a producer.

Many of the large oil companies set up pipe line subsidiaries such as the Tuscarora Pipe Line Co. of the Standard Oil Co. of New Jersey, and the Texas Pipe Line Co. of The Texas Co., but the Prairie Oil & Gas Co., chartered in Kansas, was unable to do so because Kansas law prohibited a Kansas corporation from holding a stock interest in another corporation. Since 1915 this Kansas law has been repealed or amended to permit such stock holding.

If the stockholders of the Ohio Oil Co. approve the proposed issue of preferred stock, an offer will be made immediately by Ohio directors to exchange the preferred for the Illinois common. A month or more will be required to effect the exchange.

O. D. Donnell, president of the Ohio company, said it was intended to operate the Illinois lines through the present organization as a subsidiary company.

The Illinois Pipe Line Co. has approximately 4000 miles of trunk and gathering lines in Illinois, Indiana, Ohio, Kentucky, Wyoming, Montana, Texas and New Mexico. Its main trunk line running from Wood River, Ill., to Centerbridge, Pa., forms one of the important links in the Standard Oil groups of transcontinental pipe lines. It receives Mid-Continent crude oil from the Prairie at Wood River and in years past delivered it to the Tuscarora Pipe Line Co. at Centerbridge. This delivery is no longer being made and the Tuscarora line is being converted into a gasoline line for the movement of gasoline from Bayonne, N. J., to the Ohio river.

Since the Standard Oil Co. of New Jersey began to move crude to its

Atlantic seaboard refineries by tankship, the Illinois line, like the other transcontinental lines, moved less and less crude eastward but it still had important customers at intermediate points. Crude is moved through it to the Atlantic Refining Co. plants in western Pennsylvania, to the Solar Refining Co. at Lima, O., and to smaller plants.

This year the company laid a branch line from Elwood, Ind., to the refinery of the Standard Oil Co. of Ohio at Latonia, across the Ohio river from Cincinnati in Kentucky. A fairly recent acquisition was the Indiana pipe line from Bowling Green, Ky., to Lawrenceville, Ill., the site of the Indiana Refining Co.'s plant. A branch line served the plant at Robinson, Ill., of the Lincoln Oil Refining Co., a subsidiary of the Ohio Oil Co.

Besides delivering crude to the Tuscarora, the main eastern trunk line also delivers crude to the Indiana, Buckeye and Tidewater systems. A line in Montana transports crude to the Canadian border whence it is shipped to the Regina refinery of Imperial Oil, Ltd.

The Illinois Pipe Line Co. has been a good profit earner. Indicated net profits since its organization have been:

1915	$4,334,827	1922	$2,808,255
1916	4,830,415	1923	2,233,200
1917	4,072,390	1924	2,401,302
1918	3,454,496	1925	3,855,554
1919	3,808,649	1926	2,990,423
1920	5,417,370	1927	3,812,827
1921	4,399,863	1928	4,336,387

Its dividend record has been:

1915	5%	1922	14%
1916	39%	1923	11%
1917	22%	1924	12%
1918	14%	1925	12%
1919	16%	1926	12%
1920	18%	1927	12%
1921	16%	1928	16%

This year the company has paid 20 per cent or $20 a share. If the stock is exchanged for the 6 per cent preferred of Ohio Oil, the dividends will be equivalent to 18 per cent on the present pipe line stock. However, the 18 per cent would be $4 per line share more than the average the company has paid the last five years.

Illinois Pipe Line Co. Dec. 31, 1928, had total assets of $30,051,116 after $14,258,654 in depreciation reserves had been deducted. It has no funded debt and had a surplus of $8,955,957. Its current assets total $3,198,780 and current liabilities $136,331.

The Ohio Oil Co. is one of the oldest Standard Oil producing companies. It was organized in 1887 to operate in the northwestern Ohio producing field shortly after those fields were discovered. Later it spread its operations into the Mid-Continent through its subsidiary the Mid-Kansas Oil & Gas Co. and also into the Rocky Mountain states. The Forest Oil Co., a subsidiary, has production in Smackover, and through the 60 per cent owned Ohio-Mexico Oil Corp. it has concession to 4,000,000 acres in the state of

O. D. Donnell

President, Ohio Oil Co., Findlay, O., whose company is seeking control of the Illinois Pipe Line Co. which it created in 1915 and whose stock it issued to Ohio Oil stockholders as a special stock dividend

Coahuila, Mexico, near Eagle Pass, Texas.

At the time of the Standard Oil dissolution, Ohio Oil had 35,000 barrels daily production east of the Mississippi river, in Illinois, Indiana and Kentucky as well as Ohio, but in recent years the eastern production has fallen off as old fields have declined. At present it holds a half interest in the Yates pool in Pecos county, Texas.

Ohio Oil Co. has been one of the best profit makers of the Standard Oil group, although its earnings from year to year have fluctuated with the crude oil market or market conditions. Indicated earnings since 1912 have been as follows:

1913	$22,803,661	1921	$ 3,783,121
1914	9,720,354	1922	8,471,730
1915	16,621,920	1923	6,084,953
1916	14,835,178	1924	4,548,274
1917	13,503,828	1925	9,383,253
1918	12,288,894	1926	13,536,904
1919	12,776,221	1927	5,054,956
1920	19,523,399	1928	7,314,572

Its dividend record has been high. It has never paid less than the equivalent of 24 per cent on the capital stock at the time of the Standard Oil dissolution.

Had the holder of one $25 share of Ohio Oil stock at the time of the dissolution held it to date he would have received $241.75 cash dividends from Ohio Oil, and $115 from a third share of Illinois Pipe Line stock, a total cash of $356.75 or $20.98 a year per share cash on the stock. In addition he would have received $45 par value Ohio Oil stock and $33.33 par value pipe line stock, a total value of $78.33 stock. The original stock expanded by stock dividends had a market value of $585.50 at the deflated closing prices on the New York Curb Market Dec. 13.

The yearly dividend rates of Ohio Oil have been as follows:

1912	20%	1921	43%
1913	57%	1922	60%
1914	29%	1923	*9%
1915	50%	1924	*6%
1916	92%	1925	*10%
1917	96%	1926	*14%
1918	96%	1927	*13%
1919	88%	1928	*8%
1920	80%	1929	*11%

*After payment of 300% stock dividend in 1922.

Ohio Oil Co. Dec. 31, 1928, had total net assets of $104,206,107. The amounts of the depletion and depreciation reserves were not announced. Its capital stock consisted of $60,000,000 $25 par common stock. It had no funded debt and its surplus amounted to $40,661,818.

Its current assets amounted to $47,106,654 of which $30,802,811 was made up of "salable goods," mostly crude. Current liabilities were only $3,011,607, giving it a current ratio of more than 10 to 1.

For years Ohio Oil was only a producing company. Several years ago it bought the refinery and marketing facilities of the Lincoln Oil Refining Co. With the re-acquisition of the pipe lines it will be a complete oil company.

In the last year the Ohio Oil Co. has entered the public utility field, joining with the Prairie Oil & Gas Co. and the Crawford interests of Pittsburgh (Columbia Gas & Electric Co.) in organizing the Western Public Service Corp. which is serving the territory about Salt Lake City and Ogden, Utah, with natural gas piped from southwestern Wyoming.

Each of the three interests mentioned holds a third interest in Western Public Service, which has just been granted a 50-year franchise to serve Provo, Utah, with natural gas. The service company is negotiating to buy the Utah Valley Gas Co., the manufactured gas distributing company that operates in Provo.

Gasoline Pipe Line Completed in Java

WASHINGTON, Dec. 14.—The Bataafsche Petroleum Co. (Royal Dutch) has completed a gasoline pipe line between Tjepoe and Grissee, a suburb of Surabaya, Java, a distance of 170 kilometers, approximately 106 miles, U. S. Consul Edward M. Groth at Surabaya has notified the Department of Commerce.

Except for a small 5-inch section, the line is constructed of 8-inch cast iron pipe. The gasoline will be pumped from the company's refinery at Tjepoe to its new canning plant at Grissee.

Station Attendants Should Know Needs of Regular Patrons

By V. B. Guthrie
N. P. N. STAFF WRITER

OMAHA, Dec. 14

PRACTICAL salesmanship can be applied at service stations to a much greater extent than at present, as far as most oil companies are concerned, C. W. Motter, president of the Lincoln Advertising Club and publicity director of the Lincoln Telephone Co., told Nebraska marketers, assembled here Dec. 11, 12 and 13 in their annual convention.

Every station has its regular customers, and the men on duty there know, or should know, what those customers are accustomed to buying, and it should not be necessary to ask them every time they come in the place what grade of gasoline or motor oil they want, he said.

"The salesmen at gasoline stations could well take a lesson from the good clerks in a men's furnishing store," he said.

"After you have been in such a store a few times those clerks know about what your tastes are. If you want a tie or a shirt they bring out just about what your choice will be, because they have studied you when you have been a customer there before. They know about what you want to pay. There is an element of the personal in their relations with you that please and flatter you as a customer.

"Yet how many service station salesmen do you see approaching their customers on this basis. I have been going to one station in my neighborhood for some time, yet every time I drive in the man on duty asks me what grade of gasoline I want and whether I want a medium or heavy oil. Our relations are still just as impersonal as the first time I visited the station.

"The man there could assume that I have been sold on his products or I would not be coming back and he could devote his efforts to making a friend of me as well as a customer. He could find out about my hobbies or display an interest in my car or my family that would make me go back to that station just to be waited on by him, as well as to buy the products his company sells."

The greatest asset to any business is its manpower and this is particularly true in the oil industry, Mr. Motter stated, where the man at the filling station is the oil company to most of the public. Keeping this in mind the station man should continually be observant of conditions at the station and try to govern his actions so that he will make the most pleasing impression on his customers.

"For example," said Mr. Motter, "did you ever drive into a station to find two or three cars ahead of you and watch the station man wiping the windshield and looking at the water in the radiator of the car he was waiting on, while the motorists in the other cars fidgeted or finally drove out.

"The degree of service given should take into account how busy the station is just selling gasoline and oil. When cars are waiting the man in the car at the pump knows it as well as the station man, and the chances are that he is just as anxious to be through and away from the place as the others are to have him. Sell him his gasoline or oil and let him be on his way unless he asks for some other service."

Mr. Motter said if he was running an oil company he would take down the various signs around the station such as "free air," "free crankcase drain," and so on. He would do the selling through word of mouth of the man at the station, he said, and not through signs, and above all, he would keep away from talking about the "free" this and that.

"Nobody places much value on what is free to everyone," he said. "Make the motorist appreciate that you give him these services; that they are not free, but rather that they are of value and cost the oil company real money, and that when the men at the station offer them to you, the motorist, those men are really offering something of value to you."

The oil company heads should keep in mind that an increasing number of their customers are women and that those women are a most observing and critical group of buyers, said Mr. Motter. A recent survey made by the national grocers association among 10,000 women showed that 42 per cent bought groceries because of cleanliness, service or courtesy. Nothing was said about price.

"The oil companies are spending more and more money building stations that are attractive and a credit to the neighborhood," he said. "Yet in how many of those stations are the rest rooms so untidy that they are offensive to men as well as women. The lack of care in this respect being particularly noticeable because of the attractive outward appearance of the station." Mr. Motter said if he were building stations, above all things he would put the entrances to the rest rooms on the outside.

An improvement in road signs for stations would be to have those signs tell definitely just how to get to the station, said the speaker. Too many now tell the services that the station offers, but when you get into the town you have to inquire or look around to locate the place. If the station is off the road on which the sign is displayed the sign should tell just the turns, and the distance to them, to reach the station.

Mr. Motter spoke at the morning session Dec. 12, with S. T. Hudson, of the Hudson Oil Co., Chadron, presiding.

At the session Dec. 11, with President S. A. Wassum, Tekemah Oil Co., Tekemah, in the chair, M. F. Lackey, assistant district manager, Sinclair Refining Co., Kansas City, told the Independent marketers that their personality was the greatest asset they had in their business and urged them to make the most of it.

"Personality sells merchandise," he said. "Forget about your competitors, the big companies, and what they are doing and develop your business in your own way. You will be further ahead in the long run and you will be working along a line of salesmanship that your outside competitors cannot touch."

At the luncheon Dec. 12, H. W. Pierpont, first vice president, Standard Oil Co. of Nebraska, told why his company was for the code of marketing practices.

V. B. Guthrie, managing editor of NATIONAL PETROLEUM NEWS, told the marketers that the code, when and as carried out, was a protection to the smaller Independent companies against costly marketing practices which the big companies could indulge in to a greater degree than the small company.

"Read each rule in the code and ask yourself if there is a single practice ruled out that you would indulge in, in your own company's business, unless it was already being

carried on by some other oil company," he said.

"The practices ruled out are like bad habits. They are bad enough, in and of themselves at the start, but it is the extent to which they have been carried that makes the industry desire to eliminate them entirely."

Charles M. Sutherland, secretary-treasurer of the association, answered questions from the floor concerning the application of the code. At a later session the association decided to divide the state into its senatorial districts and name a committee for each district to help in getting the marketers to sign up under the code. A resolution was adopted approving the code and urging every marketer to cooperate in putting it into effect.

Another resolution adopted was to the effect the Nebraska state legislature modify the gasoline tax law so that it would be on the same basis as those of neighboring states in the matter of refunds on gasoline imported into Nebraska and then sold over the line into another state.

As it is now, Nebraska collects the full tax on such gasoline sales, regardless as to the amount of the tax in the neighboring state, which is all the oil company can collect on such sales.

The association also asked the legislature to change the basis of taxation from the present tank car capacity on receipts to the basis of the actual volume of gasoline purchased as shown by the invoices.

President Wassum was honored by being reelected president of the Nebraska Independent Oil Men's Association for the third term. Other officers were reelected also. They are C. C. Rosenberg, Rosenberg Bros. Oil Co., Lexington, first vice president; O. J. Shaw, Lincoln Oil Co., Lincoln, second vice president; and Mr. Sutherland, secretary-treasurer.

Directors consist of G. A. Steele, division manager, Independent Oil & Gas Co., Omaha; S. T. Hudson, Hudson Oil Co., Chadron; R. A. Ogier, Hendy Ogier, Inc., North Platte; Kile R. Martin, Pilger Oil Co., Pilger; and two new directors, R. J. Porter, Porter Oil Co., Sidney, and J. W. Townsend, Townsend Oil Co., Cambridge.

There were over 400 registrations. A banquet and entertainment was held Dec. 12. A local Omaha committee was in charge, consisting of Arch Stafford, Quaker Petroleum Co., chairman; E. H. Blakely, Kendrick Oil Co.; A. W. Anderson, U. S. Oil Works; Walter E. Steele, Independent Oil & Gas Co.; M. C. Bradshaw, Producers & Refiners Corp.; F. D. Owen, A. N. Eaton Metal Products.

Omaha donors to the entertainment fund were:

A. C. Anderson, rep. Spencer Petroleum Co.; E. H. Blakely, rep. Kendrick Oil Co.; Douglas County Oil Co.; A. N. Eaton Metal Products; Eldorado Refining Co.; Gordon Oil Co.; Independent Oil & Gas Co.; Johnson Oil & Refining Co.; Midwest Petroleum Equipment Co.

MonaMotor Oil Co.; A. Y. McDonald Manufacturing Co.; Nicholas Oil Corp.; Producers & Refiners Corp.; The Quaker Petroleum Co.; Quaker State Oil Refining Co.; Rock Island Refining Co.; Shaffer Oil & Refining Co.; Skelly Oil Co.; Tide Water Oil Sales Corp.; U. S. Oil Works.

Jobber to Test Louisiana Gasoline Tax Law

TULSA, Dec. 14.—The Louisiana state gasoline tax law appears destined for a severe test as a result of a suit filed at Shreveport recently by state attorneys against the Phoenix Oil & Gas Co. for collection of back taxes alleged due.

The suit will be followed closely by oil companies in Louisiana and adjacent states, and unless a compromise is reached or the defendants change their present attitude, the case may develop nation-wide interest among oil companies.

The point which makes the suit of more than ordinary interest is the fact that the Phoenix Oil & Gas Co. officials have been quoted as stating that they do not owe the state any tax, that they are operating strictly as importers and that a tax on the goods they bring into the state would be a burden on interstate commerce.

At the time this was written the defendants had not filed an answer to the state's suit, but it was generally understood that the defense attorneys were basing their case to some extent at least on a decision of the United States Supreme Court in a case appealed by the attorney general of New Mexico.

This suit was filed by Attorney General Askren against the Continental Oil Co., Sinclair Refining Co., and the Texas Co.

Justice Day, in writing the opinion, stated in substance that "a tax which in effect was a privilege tax providing for a levy of fees in excess of the inspection cost, amounted to a direct burden on interstate commerce. Under federal constitution an importer of such products from another state into his own state for sale in original packages, had a right to sell the packages without being taxed for the privilege. A license tax upon the sale of gasoline brought into the state in tank cars, or original packages, and thus sold is beyond the taxing powers of the state."

Henry G. Plane, recently promoted to his present position as manager of refinery sales with the Johnson Oil Refining Co., Chicago. Mr. Plane has been with the Johnson company approximately 13 years

Auto Show Again Stage For Eastern Jobbers

NEW YORK, Dec. 12.—Plans for the sixth annual convention of the New England Oil Men's Association, were discussed in its semi-monthly meeting Dec. 11 at the University club in Boston. Some routine matters were taken care of but mostly the meeting was devoted to this discussion.

As in the past the convention will be held in Boston at the American House. It will be held Jan. 22, 23 and 24. P. A. Brewer, United Oil Co., Boston, is supervising it and has announced that 60 exhibitors are expected to have displays.

The association was forced to depart from past procedure in the time of holding the convention. It has been the custom to hold it while the annual Boston auto show was in progress which, until this year, has been some time during March. This year directors of the auto show changed from March to January and the association, wishing to convene at the same time, made the corresponding change.

No mention was made at the semi-monthly meeting of the results of a letter sent out two weeks ago by Ray Adams, secretary, to learn the attitude of the association members toward the code of ethics. President Albert Tattersall said he had received 25 replies, but had turned them over to the sub-committees of the various districts in which the senders were located.

Mid-Continent Export Buying Brightens Slow Week

By J. P. Mosher, Jr.
Manager, Platt's Oilgram

CLEVELAND, Dec. 16

HEAVY buying by representatives of company members of the Export Petroleum Association in the Mid-Continent last week furnished the only bright spot in refinery markets throughout the country. Spot market conditions in most of the major refining districts were described by the more emphatic as "badly depressed" while others expressed themselves with a more mild "not so good."

Despite the fact that there were plenty of reasons for being a bit pessimistic about the spot market, however, such an element seemed to be almost wholly lacking on the part of the vast majority of traders.

Too many 1930 contracts were being negotiated; too much surplus kerosene was being done away with quietly in this district; too much surplus gasoline was being disposed of in that district and too much deferred shipment business was being booked on all commodities for the general run of traders to have more than passing concern about the spot market.

December has the reputation of being a pretty poor month from the standpoint of spot market demand. Apparently the oil man has resigned himself to this supposed "fact," for he fails to get a bit excited when he says business is slow, or at least he doesn't get nearly so excited as he does in July or August when he reports that business is slow.

The Mid-Continent export buying gave refiners in that territory, north Texas in particular, enough business to keep them pretty busy for the next 50 to 60 days. Between 20 and 25 million gallons of 61-63, 390 end point and 64-66, 375 end point gasoline were purchased for January and February shipment to the Gulf.

The buying was thought by many of the trade to have been advantageous both to the buyer and the seller. The prices reported paid were 7.50 cents and 7.75 cents for the two grades, respectively. These prices are in line with current quotations in north Texas. Had the buying failed to develop, north Texas refiners probably would have had to offer their stuff to Independent exporters, or foreign buyers direct, at sacrifice prices. Either that or northern markets for high test gasolines would have had a pretty bad shake down.

From the standpoint of the exporter, last week's purchases were extremely favorable. Adding to the prices mentioned above, 1.35 cents freight, 0.375 cent for terminaling and loss through evaporation, the exporter can reckon on 9.225 cents for the 61-63, 390 and 9.575 cents for the 64-66, 375 as his costs at the Gulf. These prices compare with 9.75 cents and 10 cents for the two grades, respectively, which the export association posts at the Gulf for goods to be shipped to foreign markets.

Continued good demand for and scarcity of zero grades of gas and fuel oil were outstanding features of the Oklahoma market which otherwise was relatively quiet.

U. S. Motor gasoline was freely offered in the Chicago market on a group 3 basis at 6.50 cents against a minimum of 6.625 cents the previous week. Occasional lots of this grade were reported coming from Indiana and Illinois refineries at prices which figured as low as 6 cents on group 3 net back.

Prices for practically all commodities in the western Pennsylvania market, except neutral oils, were lower in amounts ranging from 0.125 cent to 1 cent a gallon.

Atlantic seaboard tank car markets were generally unchanged.

Tanker Movement From California Forecast

News dispatches from the Pacific Coast saying that California would "restrict its 1930 gasoline shipments to Atlantic and Gulf destination to 24,000,000 barrels" created some degree of consternation in eastern refinery circles. The total mentioned however represents lower commitments than the movement reaching similar destinations in the first 11 months of 1929 when 24,739,000 barrels had been shipped.

California commitments to Atlantic foreign destinations through the Panama Canal will reach approximately 12,000,000 barrels making the total canal movement from this source exceed 36,000,000 barrels of gasoline. Total commitments of Gas Oil and Fuel through the canal to both coastwise and foreign destinations will approximate 5,000,000 barrels. Most of the movement will consist of gas oil cargoes. Refinable crude movements are set up as only 300,000 barrels for coastwise shipment.

RICHMOND, Va., Dec. 14.—An amendment to the charter of Phillips the Oil Man, Inc., of Newport News, Va., of which E. S. Phillips is president, increases its maximum authorized capital stock from $30,000 to $40,000.

American Petroleum Institute report on refinery operations in the United States for the week ended Dec. 14, compared with the week ended Dec. 7

Districts	Per Cent of Capacity Reporting	Daily Av. Crude Run to Stills Wk. Ended 12-14 (Barrels)	Daily Av. Crude Run to Stills Wk. Ended 12-7 (Barrels)	Per Cent of Reporting Capacity Operated Wk. Ended 12-14	Per Cent of Reporting Capacity Operated Wk. Ended 12-7	Stocks Reported in Thousands of Barrels: Gasoline Stocks Dec. 14	Gasoline Stocks Dec. 7	Gas & Fuel Oil Stocks Dec. 14	Gas & Fuel Oil Stocks Dec. 7
East Coast	100.0	459,100	446,400	75.8	73.7	5,260	4,926	7,934	8,255
Appalachian	91.2	78,800	78,300	67.6	67.0	1,109	1,038	820	819
Ind.-Ill.-Ky	98.6	308,800	253,700	87.0	71.5	4,512	4,331	3,527	3,714
Okla.-Kan.-Mo	88.6	294,900	282,100	72.0	68.9	2,999	2,876	3,466	3,624
Texas	90.3	539,100	509,100	77.0	72.7	6,409	5,971	13,715	13,709
La.-Ark	95.1	193,200	193,800	67.6	67.8	1,959	1,880	4,764	4,683
Rocky Mountain	92.9	68,700	55,500	49.6	40.1	1,996	1,902	987	990
California	99.3	635,800	611,800	71.3	68.6	14,814	14,377	109,002	109,111
Total U. S.	95.2	2,578,400	2,430,700	73.6	69.4	39,058	37,301	144,215	144,905
Texas (Gulf Coast)	99.4	428,000	399,200	81.8	76.3	5,439	5,047	10,753	10,675
La. (Gulf Coast)	100.0	136,800	139,700	77.1	78.7	1,714	1,644	4,025	3,928

Cleveland Stations To Close Xmas

CLEVELAND, Dec. 17.—It is probable that the drive-in stations of the large gasoline distributing companies in Cleveland will close their stations all day Christmas or stay closed at least until 6 p.m. This was announced Dec. 16 at a meeting of the Western Reserve Petroleum Club by N. H. Squire, Pocahontas Oil Corp., president of the club.

Standard Oil Co., National Refining Co., and Canfield Oil Co. have decided on closing all day, it was announced. Pocahontas had decided on opening at 6 p.m., it was said, but may close if other important marketing companies close all day. Cities Service Oil Co. and Great Western Oil Co. will follow the practice of other companies.

Other large distributors will be solicited to join in the closing movement. One of the troublesome factors is the dealer station which the distributing companies cannot control. Dealers will be urged to observe the holiday.

A.P.I. Issues New Code Rulings in Bulletin

CLEVELAND, Dec. 14.—The American Petroleum Institute has issued in printed form its Interpretation Bulletin No. 2 covering the interpretations of Rule 2 and Rule 10 of the code of marketing practices adopted by the A.P.I. directors at Chicago.

One interpretation defines a "bona fide" lease as one which has a tenure of at least one year and is noncancellable in that time by the lessor. The other excludes the Pacific Coast states and parts of Montana, Idaho and Utah from operation of the paint restriction of rule 10.

PHILADELPHIA, Dec. 12.—Andrew Magyar, formerly in charge of bulk and retail sales in northeastern Pennsylvania for the Sinclair Refining Co., resigned in September to go with the Shell Eastern Petroleum Products, Inc., Boston.

Mr. Magyar's new duties will include the establishment of Shell distributors in the Delaware River district out of Philadelphia. His territory includes all Pennsylvania and southern New Jersey. He will represent the company in bulk sales.

For the past 11 years he has been with various oil interests in Cleveland, New York City and in Philadelphia.

39 States Show 10% Gain in Sept. Gas Consumption

NEW YORK, Dec. 5.—Increased motoring during the summer and fall months is reflected in gasoline consumption figures for 39 states compiled by the American Petroleum Institute, covering September and the first nine months of 1929. The large gains in consumption were made in states luring the tourist.

During September these 39 states had a gasoline consumption of 868,167,000 gallons, a gain of 82,640,000 gallons over September 1928. Following are September consumption figures for these 39 states:

	Month of				9 Months Ending with		
	Aug., 1929 Gallons	Sept., 1929 Gallons	Sept., 1928 Gallons	% Change over Sept., 1928	Sept., 1929 Gallons	Sept., 1928 Gallons	% Change over 1928
Alabama	17,634,000	15,765,000	14,488,000	+ 8.81	140,424,000	124,565,000	+12.73
Arizona	5,262,000	5,479,000	4,381,000	+25.06	46,073,000	36,440,000	+26.44
Arkansas	15,012,000	13,538,000	16,331,000	—17.10	99,726,000	88,319,000	+12.92
Colorado	18,472,000	14,506,000	12,568,000	+15.42	121,353,000	110,490,000	+ 9.83
Delaware	3,782,000	3,049,000	3,025,000	+ 0.79	24,469,000	20,543,000	+19.11
Florida	16,585,000	15,552,000	15,837,000	— 1.80	168,030,000	171,237,000	— 1.87
Georgia	25,699,000	15,411,000	16,635,000	— 7.36	162,846,000	151,162,000	+ 7.73
Idaho	6,992,000	6,139,000	5,592,000	+ 9.78	40,259,000	37,788,000	+ 6.54
Indiana	46,323,000	40,545,000	37,690,000	+ 7.57	328,456,000	291,760,000	+12.58
Iowa	38,724,000	33,354,000	29,252,000	+14.02	250,032,000	233,642,000	+ 7.02
Kansas	40,118,000	34,278,000	30,776,000	+11.38	280,552,000	245,792,000	+14.14
Kentucky	16,783,000	14,990,000	12,500,000	+19.92	115,668,000	99,034,000	+16.80
Louisiana	17,031,000	16,103,000	13,867,000	+16.12	129,010,000	121,608,000	+ 6.09
Maine	14,202,000	11,445,000	9,689,000	+18.12	72,493,000	62,167,000	+16.61
Michigan	86,125,000	75,252,000	67,076,000	+12.19	595,903,000	489,354,000	+21.77
Minnesota	43,708,000	35,389,000	31,149,000	+13.61	270,174,000	247,166,000	+ 9.31
Mississippi	(a)13,226,000	(a)11,824,000	11,316,000	+ 4.49	(a)105,320,000	95,263,000	+10.56
Missouri	41,186,000	36,984,000	33,091,000	+11.76	289,427,000	266,631,000	+ 8.55
Nebraska	23,690,000	18,150,000	17,777,000	+ 2.10	163,729,000	153,770,000	+ 6.47
Nevada	1,909,000	1,878,000	1,523,000	+23.31	13,289,000	10,985,000	+20.97
New Hampshire	8,301,000	6,399,000	5,391,000	+18.70	44,114,000	36,256,000	+21.67
New Jersey	54,037,000	44,111,000	38,862,000	+13.51	375,914,000	315,756,000	+19.05
New Mexico	4,797,000	4,506,000	3,441,000	+30.95	35,990,000	27,086,000	+32.87
North Carolina	21,611,000	24,091,000	21,623,000	+11.41	189,514,000	178,905,000	+ 5.93
North Dakota	19,436,000	13,788,000	17,744,000	—22.29	101,648,000	91,179,000	+11.48
Ohio	101,008,000	94,846,000	82,733,000	+14.64	723,108,000	642,893,000	+12.48
Oklahoma	30,889,000	28,408,000	25,374,000	+11.96	235,511,000	208,202,000	+13.12
Oregon	18,075,000	15,903,000	14,617,000	+ 8.80	121,471,000	109,595,000	+10.84
Rhode Island	9,227,000	7,840,000	6,004,000	+30.58	61,949,000	49,358,000	+25.51
South Dakota	16,159,000	11,107,000	10,507,000	+ 5.71	95,698,000	84,539,000	+13.20
Tennessee	19,899,000	19,179,000	15,802,000	+21.37	143,997,000	125,703,000	+14.55
Texas	73,608,000	67,321,000	59,659,000	+12.84	571,143,000	490,465,000	+16.45
Utah	6,122,000	5,440,000	4,756,000	+14.38	42,530,000	36,821,000	+15.50
Vermont	6,547,000	4,962,000	4,505,000	+10.14	33,297,000	27,166,000	+22.57
Virginia	22,420,000	19,568,000	16,217,000	+20.66	154,561,000	134,426,000	+14.98
Washington	27,333,000	23,989,000	21,843,000	+ 9.82	190,754,000	172,188,000	+10.78
West Virginia	13,525,000	12,826,000	11,090,000	+15.65	93,119,000	82,251,000	+13.21
Wisconsin	48,190,000	40,875,000	37,530,000	+ 8.91	294,463,000	267,022,000	+10.28
Wyoming	4,993,000	3,377,000	3,266,000	+ 3.40	26,922,000	25,127,000	+ 7.14
Total	998,640,000	868,167,000	785,527,000	+10.52	6,952,936,000	6,162,654,000	+12.82
Daily Average	32,214,000	28,939,000	26,184,000	+10.52	25,469,000	22,491,000	+13.24
Increase over previous year.							
Amount of Increase	.....	82,640,000	.....	.....	790,282,000	.....	.....
Percentage Increase in Daily Average	.....	10.5%	.....	.....	13.2%	.....	.....
Massachusetts	54,399,000	45,910,000	.....	.....	.....	.....	.....
New York	149,810,000	128,398,000	.....	.....	.....	.....	.....

(a)—Estimated.

	Quarter End				9 Months Ending with		
	June 30, 1929	Sept. 30, 1929	Sept. 30, 1928		Sept. 30, 1929	Sept. 30, 1928	
California	307,518,000	334,419,000	287,922,000	+16.14	929,707,000	824,459,000	+12.76
Montana	23,732,000	27,564,000	25,980,000	+ 6.10	58,991,000	58,959,000	+ 0.05
Pennsylvania	228,469,000	253,940,000	202,900,000	+25.15	656,495,000	200,662,000	+227.16
	April	May	June		July	August	
Connecticut	15,198,000	18,630,000	19,592,000		21,872,000	.....	
Maryland	.....	.....	14,775,000		16,600,000	17,500,000	

Natural Gasoline Association Adopts New Type of Gravity Balance

By Allen S. James
N. P. N. STAFF WRITER

By Telegraph
TULSA, Dec. 17

A NEW gas balance designed by the Bureau of Standards under the direction of S. F. Pickering for determination of specific gravity of gases, and a tentative test procedure drafted by the gas testing committee has been adopted by the board of directors of the Natural Gasoline Association of America. Approval was formally made at a meeting in the association offices December 17.

The board adopted the test procedure as a tentative standard method for one year beginning Jan. 1, 1930. After Jan. 1, 1931 the method will become standard unless there are some revisions or changes.

Action by the board ends a task the gas testing committee has worked on for three or four years. In its report on March 26, 1928, the committee recommended that the problem of determining a proper method of testing for the specific gravity of gases in connection with measurements by orifice meter be referred to the Bureau of Standards for definite recommendation. The board approved the recommendation and appropriated a sum of money to defray the expenses.

The bureau named Mr. Pickering to conduct the investigation and every type of balance was inspected and tested before the present one was designed. The committee in its report to the board stated in part "It may be pointed out here that the Bureau of Standards agrees with the Gas Testing Committee that the gravity bottle or effusiometer would not be a satisfactory apparatus for accurately determining the specific gravity of gases. Neither did the bureau feel that any of the types of gas gravity balances in use at the time its investigation was begun were satisfactory.

"Mr. Pickering, for the Bureau, has developed a balance differing essentially from previous balances in the suspension of the beam and a model of this balance is now the property of this association. Acting upon the recommendation of the bureau this committee has drafted a tentative specifications of apparatus and test procedure for determining the specific gravity of gases by the balance method. This entire tentative standard has been written as to apparatus and procedure in sympathy with the suggestions of the bureau."

The bureau in approving and recommending the balance stated that it believed the balance would eliminate the objectionable feature of the knife edge and the double strip type of suspension.

In the specifications for apparatus the committee states "the balance to be used shall consist essentially of a balance beam with its supporting fulcrum mounted inside a gas-tight, cylindrical metal case. The balance beam shall have a light, sealed globe, made of substantially inflexible material, attached rigidly to one end and an adjustable counter-weight on the other.

The beam fulcrum shall be a support, described by the Bureau of Standards as a modified Cardan suspension as illustrated in Figures 1 and 2. In this construction four metal strips fixed rigidly at A in Figures 1 and 2 are attached securely to parts B which are in reality a part of the balance beam."

Mr. Pickering brought the apparatus to Tulsa with him at the time the testing committee of which George Bunn of Phillips Petroleum Co., Bartlesville, is chairman, went into the field with Mr. Pickering and subjected the balance to a series of rigid tests. Final approval of the apparatus and the tentative test procedure was made at a meeting of the committee Dec. 13.

When he set out to design the new balance Mr. Pickering sought an apparatus which would be sensitive and yet of such rugged construction that it could be used for field determinations. He sought a design which would give stability of the beam and a reduction in the factor of error caused by movement of the apparatus from an absolute level.

Former balances were found to give an extensive error when the apparatus was not set absolutely level. And in the field it was found difficult to achieve a level and keep it during a test. In one type of balance which

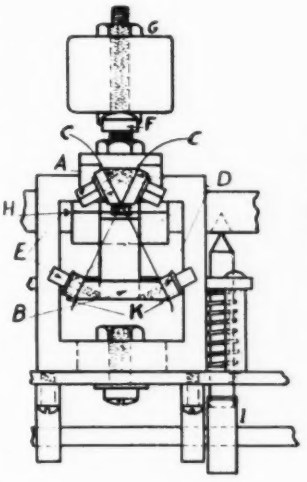

Fig. 1

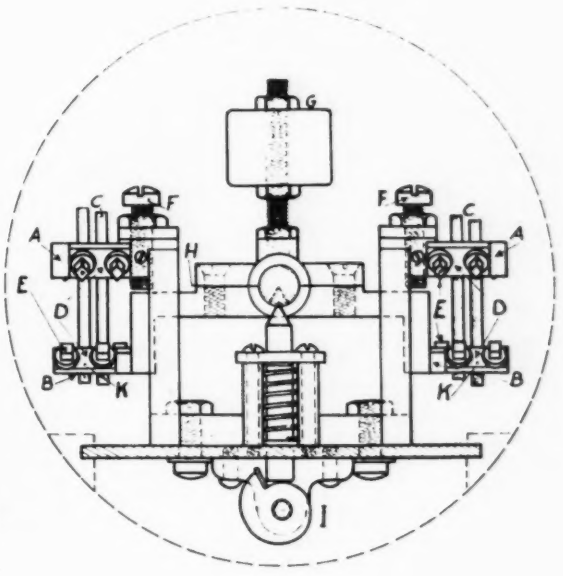

Fig. 2

Diagram of suspension method used in new gravity balance designed by the Bureau of Standards for the Natural Gasoline Association. Explanation of lettering: A, upper fixed support; B, lower support attached to balance beam; C, phosphor bronze suspension strips; D, plates fastening suspension strips; E, screws fastening plates; F, screws holding beam when in clamped position; G, weight for adjusting sensitivitiy; H, center line of balance beam; I, cam for clamping balance beam; K, small pins over which strips fit

used a suspension principle there was a tendency toward movement laterally as well as vertically.

To reduce this lateral movement of the beam Mr. Pickering adopted a modification of the Cardan suspension. In his experiments he found it desirable to cross the strips near the point of suspension rather than half way between the points of suspension and the beam in the Cardan method.

Suspension strips in the apparatus as presented by Mr. Pickering are of phosphor bronze one-eighth of an inch wide and one one-thousandth of an inch thick. These were found to give such sensitivity that the error in the laboratory did not exceed one-fourth to one-fifth of one per cent. In the field it is believed that determinations will not have an error of more than one-half of one per cent. The new balance is said to be five times as sensitive as the old methods.

Attorneys Fail to Agree On Decree in Patent Case

By Telegraph
WASHINGTON, Dec. 16

SHARP disagreement between oil company attorneys and the court on the wording of the decree to be issued in the patent club suit in Chicago caused Judges Evans and Page to ask for briefs on the subject on Dec. 13, to be filed, and further hearings will be held December 20.

The hearings were held in the U. S. Circuit Court of Appeals, Chicago, on patent litigation between the government and 53 defendant concerns headed by Standard of New Jersey, Standard of Indiana and The Texas Corp. The decree sought refers to the patent club case, on which the same two judges, with Circuit Judge A. B. Anderson dissenting, rendered a decision on June 11, 1929, that the "patent club" was illegal and in violation of the Sherman anti-trust act. In accordance with the previous decision, the government submitted the draft of a decree which declared previous agreements and contracts null and void, and prohibiting them permanently and in toto.

The separate drafts submitted by the Standard Oil companies, and by The Texas Corp. agreed that only the so-called illegal clauses of the contracts be prohibited, the remainder of the company agreements to be allowed to stand. The government contended that the continuance of any part of the earlier agreements would continue the evils of which the government had complained, and thus render the decision of the court of no effect.

The oil companies further urged that the court could strike out only those parts of the contracts that had been found unlawful. Government attorneys stated that in effect the draft they had submitted would permit new agreements to be made between the oil companies covering those points of the old contracts that have not been declared illegal, such new contracts to be entered into with the advice and consent of the government.

At the time of handing down the decision of June 11, the court directed attorneys for the government and for the defendants to agree upon a decree of injunction, which is the purpose of the present hearing. On the wording of this decree will depend not only the status of the patent club, at present in existence, but the position of the government on contracts of similar nature in the future.

Counsel for the defendants are headed by L. L. Stephens of Chicago, Charles Neave of New York, and Judge C. B. Ames of New York City. Assistant U. S. Attorney General John Lord O'Brien, in charge of anti-trust prosecutions, is directing the case for the government.

Gasoline Supply Men Elect Officers

TULSA, Dec. 14.—M. F. Waters, of the Hanlon-Waters, Inc., was elected president of the Natural Gasoline Supply Men's Association, the past week. This organization is auxiliary to the Natural Gasoline Association of America. W. A. Schlueter, Refinery Supply Co., was elected first vice-president and A. J. Kerr, Pittsburgh Equitable Meter Co., second vice-president. M. H. Kotzebue, Tulsa Boiler & Machinery Co., was named as treasurer and Ray Miller, secretary. Mr. Miller is secretary of the Natural Gasoline Association.

M. F. Waters, new president of the Natural Gasoline Supply Men's Association

These officers and the following constitute the new board of directors: J. H. Satterwhite, Westcott & Greis, Inc.; R. E. Howe, Atlas Supply Co.; W. G. Cummings, Clark Brothers Co.; J. B. McMahon, Foxboro Co., Inc. and Dr. E. R. Lederer, president of the Natural Gasoline Association.

Equitable Builds New Gasoline Plant

CLEVELAND, Dec. 14.—The Equitable Gas Co. of Pittsburgh has completed plans for a new gasoline plant to replace their old plant at Rogersville, Pa., and construction will be begun immediately.

The new plant will be complete with new steam stills, absorbers, rectifying columns, heat exchangers, and pressure storage tanks. D. P. Hortson, chief engineer of the company states that the plant will be erected on a site alongside the old installation, and that the shut-down time between the closing of the old and the opening of the new plant will be cut to the "irreducible minimum." The plant will have a capacity of 25,000,000 cubic feet of gas per day, and the most recent improvements in gasoline plant equipment are embodied in its design.

The Burrell-Mase Engineering Co. of Pittsburgh designed the plant, which is being erected by the Byllesby Engineering and Management Corp. of Chicago, Ill. Just when the plant will be in operation is not yet definitely known, but Mr. Hortson says they hope to turn gas into the new absorbers before the middle of next year at the latest.

Barnsdall Refineries To Blend Ethyl

CLEVELAND, Dec. 16.—Barnsdall Refineries, Inc., have contracted to make Ethyl gasoline, beginning Jan. 15, 1930, and will do its blending at Okmulgee, Okla., the former Waite Phillips Co. plant.

Barnsdall has gasoline distribution through the middle west and also serves the jobbing trade.

The contract with the Ethyl Gasoline Corp. has just been signed.

Oil Producers and Corporations Benefited by Income Tax Cuts

By H. E. Rorschach*

THE resolution recently passed by Congress, and now a law, reduces the rates of normal tax on the taxable incomes of individuals from 1½ to one-half of 1 per cent on the first $4,000; from 3 to 2 per cent on the second $4,000 and from 5 to 4 per cent on the balance, and reduces the corporation rate and the rate on insurance companies from 12 to 11 per cent. The resolution is applicable only to the rates for the calendar year 1929, and is estimated by the Treasury Department to effect a saving to taxpayers of approximately $160,000,000.

Table I and Table II indicate the reduction in tax both in amount and percentage for a single person and for a married person with no dependents. These tables are based on the assumption that all income, not in excess of $10,000, is earned income, and in addition, that one-fourth of the net income in excess of $10,000 up to $30,000, is earned income.

It will be noted from an examination of these tables that the small individual taxpayer will secure the greatest amount of relief as regards percentage reduction in tax. An individual having a net income of $5,000 or less, will secure a reduction in tax of two-thirds of the amount he would pay under the 1928 Revenue Act. This is probably the greatest single tax reduction which has been made since the advent of income tax laws which were enacted first in 1913. The individuals with incomes of over $100,000 will secure a reduction of about 4 per cent.

An examination of Table III, which indicates the reduction in taxes paid by corporations, will show that corporation tax is reduced uniformly 8 1/3 per cent. Taken as a whole, corporations will probably secure more relief from the new rate than the individual taxpayers.

The last statistics available showing income tax payments, cover the year 1927, and show that individuals having a net income of $4,000, or less, paid approximately $32,000,000, while individuals having a net income in excess of $4,000, paid in taxes to the extent of $1,109,000,000, or a total for all individuals of $1,141,861,000, whereas, corporations paid $1,131,000,000. The tax rate for the year 1927 on corporations was 13½ per cent. It is estimated that about $75,000,000 of the reduction in income by the 1929 resolution will accrue to individuals and about $85,000,000 will accrue to corporations.

This reduction will mean a saving of several million dollars in tax to the oil producers. One of the large oil corporations, for the year 1928, paid in excess of $5,000,000 in federal income taxes. The resolution will mean to them a reduction of (assuming that their income for 1929 will be the same as 1928) approximately $400,000. Some of the lesser oil corporations will also receive considerable benefits, as the percentage reduction is the same for corporations no matter how small or how large the net income may be.

Any individual, or corporation, who filed a fiscal year return during the year 1929 will, under this resolution, be entitled to either a refund or a credit for the portion of the calendar year 1929 which constituted their fiscal year.

*Rorschach & Wolfe, accountants and auditors, Tulsa, Okla.

Table III—Taxes to Be Paid by Corporations

Total net income	Total tax 1928 law	Total tax 1929 resolution	Reduction in tax Amount	Reduction in tax Per cent
$5,000	$240.00	$220.00	$20.00	8.33
10,000	840.00	770.00	70.00	8.33
25,000	2,640.00	2,420.00	220.00	8.33
100,000	12,000.00	11,000.00	1,000.00	8.33
500,000	60,000.00	55,000.00	5,000.00	8.33
1,000,000	120,000.00	110,000.00	10,000.00	8.33

Table I—Taxes to Be Paid by Unmarried Persons

Total net income	Normal tax 1928 law	Normal tax 1929 resolution	Surtax	Total tax 1928 law	Total tax 1929 resolution	Reduction in tax Amount	Reduction in tax Per cent
$4,000	$28.13	$9.38	.....	$28.13	$9.38	$18.75	66.66
5,000	39.38	13.13	.....	39.38	13.13	26.25	66.66
6,000	56.25	22.50	.....	56.25	22.50	33.75	60.00
7,000	78.75	37.50	.....	78.75	37.50	41.25	52.38
8,000	101.25	52.50	.....	101.25	52.50	48.75	48.15
9,000	123.75	67.50	.....	123.75	67.50	56.25	45.45
10,000	153.75	90.00	.....	153.75	90.00	63.75	41.46
30,000	1,091.25	840.00	865.00	1,956.25	1,705.00	251.25	12.84
50,000	2,028.75	1,590.00	2,925.00	4,953.75	4,515.00	438.75	8.86
80,000	3,435.00	2,715.00	7,688.75	11,123.75	10,403.75	720.00	6.47
100,000	4,403.75	3,490.00	11,440.00	15,843.75	14,930.00	913.75	5.77
500,000	24,403.75	19,490.00	91,440.00	115,843.75	10,930.00	4,913.75	4.24
1,000,000	49,403.75	39,490.00	191,440.00	240,843.75	230,930.00	9,913.75	4.12

Table II—Taxes for Married Persons with No Dependents

Total net income	Normal tax 1928 law	Normal tax 1929 resolution	Surtax	Total tax 1928 law	Total tax 1929 resolution	Reduction in tax Amount	Reduction in tax Per cent
$4,000	$5.63	$1.88	.....	$5.63	$1.88	$3.75	66.61
5,000	16.88	5.63	.....	16.88	5.63	11.25	66.65
6,000	28.13	9.38	.....	28.13	9.38	18.75	66.65
7,000	39.38	13.13	.....	39.38	13.13	26.25	66.66
8,000	56.25	22.50	.....	56.25	22.50	33.75	60.00
9,000	78.75	37.50	.....	78.75	37.50	41.25	52.38
10,000	101.25	52.50	.....	101.25	52.50	48.75	48.15
30,000	1,016.25	780.00	865.00	1,881.25	1,645.00	236.25	12.56
50,000	1,953.75	1,530.00	2,925.00	4,878.75	4,455.00	423.75	8.69
80,000	3,360.00	2,655.00	7,688.75	11,048.75	10,343.75	705.00	6.38
100,000	4,328.75	3,430.00	11,440.00	15,768.75	14,870.00	898.75	5.70
500,000	24,328.75	19,430.00	91,440.00	115,768.75	110,870.00	4,898.75	4.23
1,000,000	49,328.75	39,430.00	191,440.00	240,768.75	230,870.00	9,898.75	4.11

Review of Late Production News

DAILY average crude production in the country during the week ended Dec. 14 totaled 2,622,250 barrels, a decrease of 8300 barrels from the previous week, according to the American Petroleum Institute.

Imports of crude were at the rate of 245,430 barrels, or 32,140 barrels less than the previous week. Total new crude supply likewise fell off 40,440 barrels, to 2,867,680 barrels the week ended Dec. 14.

Oklahoma daily average output was steady, declining but 4600 barrels, to 650,500 barrels. Oklahoma City pool declined 8150 barrels. Sasakwa gained 4100 barrels and Allen 2050 barrels.

Production in Santa Fe Springs fell off 8000 barrels on daily average, Elwood-Goleta gained 5000 barrels, and total California output declined 5600 barrels.

Gray county in the Texas Panhandle gained 3150 barrels and Crane and Upton counties 2250 barrels. Howard county fell off 2200 barrels.

Salt Creek rose 5150 barrels on daily average.

California

ALTHOUGH crude oil production in California was estimated to have decreased 6200 barrels during week ending Dec. 14, as compared with the previous week's daily average, the actual yield by days toward the latter half of the week was approximately 715,000 barrels or 25,000 barrels above the estimated average output during the past week.

Several large completions, accompanied by failure on the part of one or two independents to cooperate, accounted for the larger part of the increase.

It is expected that operators in the flush fields will determine upon a plan whereby the state yield will be reduced to the desired figure of 650,000 barrels during the coming few weeks.

Definite action is not expected on the enforcement of California's gas conservation law until after the first of the year, as continued court delays threaten to prevent prompt action. Many operators have finally given up hope of solving the overproduction problem by means of this law. If it is found enforceable, future excess production may be curtailed by its help but Santa Fe Springs, Long Beach, and Ventura Avenue are likely to be only names before California's gas law is enforced.

Penetration of an oil sand by two wells at Kettleman Hills and one at Maricopa Flats, in the San Joaquin valley, caused considerable speculation as to where oil may not exist in those areas.

Current production in this country by pools is found on page 113.

Texas, New Mexico, Louisiana

THE finding of production in the Deep Rock Oil Co.'s third test in Andrews county, northwest of the town of Andrews, foreshadows a new West Texas field eventually to assume important proportions. In an incompleted stage at 4348 feet, the Deep Rock well stood 3600 feet of oil in the hole and made one flow when casing was being lowered. The well is No. 1 Ogden in sec. 6, block A-46.

It lies directly east of Lea county, New Mexico production in the Permian salt basin geological province. In Lea county, the latest important producer is Continental Oil Co.'s No. 1 A. E. Meyers, 17-21S-36E, which at 4001 feet made 75,000,000 cubic feet of gas daily and from 25 to 50 barrels of oil hourly.

After opening choker on Pure Oil Co.'s No. 1 Jarman discovery in the new Van Zandt county field of East Texas the flow was increased from 260 to 1112 barrels daily, with 100 pounds pressure. Pure's south offset well, No. 1 Thompson, a more recent completion, made 1751 barrels through nine-sixteenths inch choker, under 390 pounds pressure. Two other tests offsetting the discovery were about ready for completion at the end of the week.

Operations in Gulf Coastal Texas and Louisiana were of nominal interest except in the North Dayton field of Liberty county, Texas. There, the Harrison Oil Co., & J. S. Abercrombie, Inc., completed the first deep pay well on the North Dayton salt dome. It was No. 1 Balderach, making 4000 barrels, initial production, of 41.2 gravity oil at 5108 feet.

Oklahoma-Kansas

NEW wells in the Oklahoma City pool and in the Cromwell sand area in East Little River, Seminole, were the features of the week for Oklahoma. One of the Oklahoma City wells extended the sand production a location south, and was, incidentally, the best sand well completed in the field to date, and one of the biggest sand wells ever completed in the state. It made 7500 barrels the first six hours, and then had to shut in to erect more separators.

In the Texas Panhandle a 2000-barrel wildcat northeast of the Bowers pool was the leading event. Originally a 200 barrel well it drilled itself in in the course of a few days.

Another producer for the Voshell pool of McPherson county, Kansas, helped to continue this pool as the state's most important development of the moment. The well is swabbing 1700 barrels.

Oil Man's Cattle Win Prizes

ELDORADO, Kan., Dec. 12.—A herd of blue-ribbon Herefords brought honors to Robert H. Hazlett, vice president of the El Dorado Refining Co. here, at the American Royal Livestock Show held in Kansas City during November.

Mr. Hazlett, who is over 80 years old, has always been an active participant in cattle competitions. He is known over the world for this particular breed of Herefords. In this latest exhibition he won one first place, five second places, and nine other important places with his cattle. The cattle will be exhibited at the annual International Live Stock show to be held in Chicago.

Santa Fe Springs Production 35,000 Barrels Over Proration Goal

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Dec. 13

PRORATION plans in California were threatened during the past week by substantial increases in the daily output from the flush fields of Santa Fe Springs and Elwood.

Crude oil production at "The Springs" was 180,000 barrels on Dec. 13, an excess of 35,000 barrels over the allowable production figure set by Umpire Paul Grimm for the two-week period ended Dec. 15.

A serious condition exists in California's oil industry as a result of several large completions and non-cooperation on the part of one or two Independent operators. Leaders are marshalling their forces to prevent an outbreak that would bring about another cut in the price of crude oil and that would at the same time nullify the good effects of the past month of curtailment.

At the close of proration period ended Nov. 30, production at Santa Fe Springs was above the 175,000 barrel mark and operators were called upon to bean in their wells, nearly to the killing point. As a last straw, and just at a time when production was on the way to the nearly normal output of 160,000 barrels, two large producers were brought in in addition to a number of smaller ones.

Superior Oil Co. completed its Wardman No. 5 from a depth of 7933 feet for an initial production of 11,850 barrels of oil. Following this achievement, H. A. Bardeen, an Independent operator, completed his well No. 1 for 8800 barrels daily from a depth of 8064 feet.

The potentialities of the lower sands at Santa Fe Springs are on the way to being realized by operators as well after well is brought in from depths below the 8000 foot level. A test well, drilled by Oscar Howard, an Independent operator, has demonstrated that oil sands exist as far down as 9100 feet.

At a meeting held Dec. 13, operators were unable to decide definitely on the suspension of drilling operations in the various flush fields, as not all of the major companies were represented and it was, therefore, decided to continue the discussion until Dec. 17.

L. P. St. Clair, executive vice-president of the Union Oil Co. on his return from the A.P.I. meeting offered a solution to the Santa Fe Springs development problem that is considered by many operators as standing a good chance of success.

Mr. St. Clair suggests that as a means of obtaining a fair return from the deeper oil sands known to underlie a large portion of the field unit operation should be adopted. A means of development that would result in a more uniform drilling campaign and consequently a greater production from wells located on the edge of the field.

Although no actual plan has been worked out, it is thought that a few companies would drill into the deeper sands, thus cutting down the operating costs but at the same time giving companies with wells headed for the deeper pay a percentage of the returns from the wells drilled in.

This plan, among others, will be discussed at the meeting of operators to be held Dec. 17, and executives are hopeful of arriving at a solution to the problem.

A small group of Independent operators have consistently refused to enter into any form of curtailment agreement and at present are contributing approximately 9000 barrels daily to Santa Fe Springs' excess. As long as these operators continue their present policy production in the field cannot be curtailed to the desired figure according to general opinion.

It is not only that they do not pinch back their wells but their action also compels offsetting companies to protect their interests. The group has offered lease obligations as reason for not abiding by curtailment orders. The property owners are reported to be favorable to the production cut but the group has not found its way to fall in line. It is not difficult to see its viewpoint particularly when it is known that a refinery affiliated with it absorbs the total crude oil production and is operating at its maximum efficiency.

PRODUCTION at Elwood was estimated to be 41,000 barrels on Dec. 12 by Umpire Grimm, an excess of 11,000 barrels over the desired figure. Completion of Elwood Exploration Co.'s tideland permit 90-1 and C. J. Mahoney's tideland permit 91-1 accounted for the major portion of this increase.

Under an agreement operating in this field only two additional wells will be completed prior to Feb. 1 so that natural decline in old producers, accompanied by cooperative curtailment efforts on the part of operators, is expected to bring the daily yield down to the desired figure of 30,000 barrels within a few weeks.

Operators at Ventura Avenue have held numerous conferences during the past week in an effort to iron out existing difficulties and at the same time retain the "teeth" in the curtailment agreement. Production for Dec. 12 was estimated at 51,000 barrels of oil and 162 million cubic feet of gas per day, daily yields that are not expected to fluctuate any considerable amount during the remainder of the term of the prorating agreement.

SOME difficulty is being experienced in controlling the gas and oil output of this field, due to the fact that when a well is killed the production of oil and gas in the adjacent wells increases.

In a communication to Carl H. Beal, a lease owner in the Kettleman Hills, Secretary of the Interior Wilbur, asked that the Kettleman Hills committee consider a proposal whereby the expected output from Petroleum Securities Felix No. 1 on the north dome would be prorated. The Secretary also suggested that the committee consider the plan of developing Kettleman Hills along the lines of unit operations, endorsed by the A.P.I. as an ideal method of producing on an extensive scale. Leaders in the oil industry hope that this plan of operation will be worked out so as to be put in operation at the expiration of the Kettleman Hills conservation agreement, July 1, 1931.

At a meeting of the Kettleman Hills operators, Dec. 11, Carl Beal, J. H. Pemberton, A. H. Bell, E. G. Gaylord, and R. R. Templeton were appointed by Judge E. D. Reiter to act as a committee to determine a method of shutting in the Felix No. 1.

This well is situated on the north dome on fee land owned by the Felix Oil Co. and is being drilled by Petroleum Securities on a 50-50 basis. Owing to the fact that the well is on fee land it does not come under the provisions of the general Kettleman Hills conservation agreement and, if allowed to produce, might

precipitate a crisis resulting in an extensive drilling campaign in that area.

The Felix well is located on the west ½ of the east ½ of section 35, 21-17. It is reported to have suspended drilling operations with the drill in the oil sand. It will be completed as soon as sufficient storage can be built. Associated Oil Co. offsets the Felix to the east and Standard Oil Co. to the west, with Continental Oil Co. holding property on the north and south. Continental up to the present has not started work on its holdings but may be expected to if the Felix is completed.

Bolsa Chica Oil Co.'s Ferguson No. 1 on the north dome of the Kettleman Hills also complicated matters by the penetration of oil sand at 7450 feet. This well is located on the west flank of the structure and midway between the discovery well and General Petroleum Corp.'s Ochsner 2. If the government will consider the penetration of oil sand as sufficient proof of discovery the company will suspend all drilling operations until the close of the two-year period, ending July 1, 1931.

IF THE government desires additional demonstration, casing will be set and a production test made, in which event it is likely that another producer will be added to the Kettleman Hills list. Extremely high gas pressures make the killing of a well in this area a very dangerous, and nearly impossible task, so that a well once completed is likely to remain on production.

The company has 1860 acres surrounding its Ferguson well that would be proved up if a commercial producer were obtained and at the same time the future possibilities of the west flank of the structure would be determined. Since the failure of Petroleum Securities Robinson No. 1 to find oil sand, although drilled to below 8000 feet, operators have discounted previous estimates of the ultimate recovery from the Kettleman Hills nearly 25 per cent; however, if the Ferguson is completed it is expected that a survey will be made of the Robinson well to determine its straightness. The west flank of the anticline is known to dip very sharply and may, therefore have deflected the drill.

Standard Oil Co. has cemented its Well No. 81 on section 11P and will drill it deeper in search of a lower producing horizon. Standard's No. 8 on Sec. 1 is bottomed at 7108 feet and will set casing during the coming week. These two wells are scheduled to be completed under the Kettleman Hills agreement. in addition to the discovery well of Milham Exploration Co. and Continental Oil Co.'s 12-8 which is now yielding about 6700 barrels of oil per day and 135 million cubic feet of gas. Production from the discovery wells remains at approximately 3000 barrels of oil and 75 million cubic feet of gas.

Still another interesting discovery was made during the past week in the San Joaquin Valley region when Doyle Petroleum Co. announced the penetration of a new oil sand below the "contact zone" at Maricopa Flats. The bottom of its Weir 3 is at 4324 feet, just above the brown shale, in a zone that has yielded several large producers of comparatively high gravity oil—26 to 28 A.P.I.

Santa Fe Springs Potential Now 316,522 Barrels Per Day

By Telegraph

LOS ANGELES, Dec. 17

UMPIRE PAUL GRIMM in issuing the periodical report for Elwood, Dec. 15, suggested a cut of 46.53 per cent from the field's total potential production in order to hold the output to the stipulated figure of 30,000 barrels per day during the period Dec. 14 to 31. Four new completions during period Dec. 1 to 13, increased the field's potential 11,130 barrels per day.

Full report on Elwood indicated the following: Potential production Dec. 14 to 31, was 56,110 barrels per day allotted production same period 30,000 barrels per day. Excess production Dec. 1 to 13 was 4374 barrels per day allowable production Dec. 14 to 31 was 25,626 barrels per day. Total excess production Dec. 1 to 13 was 78,735 barrels. Total allowable production Dec. 14 to 31 was fixed at 461,268 barrels.

In report No. 3 on Santa Fe Springs, the umpire announced that 19 wells had been completed during the period Dec. 1 to 15, for a potential of 71,600 barrels per day. He also announced a total potential for the field for the period of Dec. 16 to 31 of 316,522 barrels per day. Allotted production for the same period 150,000 barrels per day, excess production Dec. 1 to 14 was 28,071 barrels per day allowable production Dec. 16 to 31 was 121,947 barrels per day. Total excess production Dec. 1 to 14 was 449,123 barrels and a total allowable production Dec. 16 to 31 was fixed at 1,951,152 barrels.

Wilshire Oil Co. group showed a total excess production Dec. 1 to 14 of 295,527 barrels or more than half of the total excess for the entire field. This group had an excess production during the first half of December of 18,470 barrels per day and an allotted production during the last half of December of 10,078 barrels per day, leaving 8394 barrels per day of excess production in the period Nov. 16 to 30, which the allotted production for the period of Dec. 1 to 15 was not able to balance.

Plan to Stop Drilling On Top of Sand

(By Telegraph)

LOS ANGELES, Dec. 17.—Santa Fe Springs production was 185,400 barrels Dec. 15. To prevent overproduction, a plan has been suggested whereby drilling will be suspended whenever a water shut-off has been affected. The plan was passed by state mining bureau. After critical period has passed wells will be completed in proper rotation so as to maintain existing differences in completion dates. Umpire Grimm predicts that former production peak will be surpassed if drilling is not curtailed.

Enforcement of Gas Law Is Delayed

LOS ANGELES, Dec. 14.—Court delays continue to hamper enforcement of California's gas conservation law. At the hearing Dec. 11 before the State Supreme Court the defendant companies were given five days in which to file briefs in answer to the state's arguments.

After the briefs are filed the court will take the matter under advisement and will issue its decision, it is hoped by the state, at its first conference Dec. 20. However if other matters are found more pressing the case may not come up until after the holidays.

After all this preamble practically nothing will have been accomplished as the trial before the supreme court is only on the question of whether or not "other necessary parties" shall be included in the suit being brought by the state to prevent unreasonable waste of gas at Santa Fe Springs. Following the decision by the supreme court the case will be referred to the superior court with an order to or not to include the other parties.

The question of constitutionality and other pertinent parts of the law will be determined in the superior court for both Santa Fe Springs and Long Beach, after which if a lot of other delays do not prevent direct action the law may become effective.

Oklahoma to Continue Proration Through 1930 First Quarter

TULSA, Dec. 14

OKLAHOMA operators voted approval on Dec. 12 of the plan outlined by committees representing the Mid-Continent Oil & Gas Association, Oklahoma-Kansas division and the operators generally for proration of flush and semi-flush pools of the state during the first three months of 1930.

This report was published in NATIONAL PETROLEUM NEWS, Dec. 4, page 64. A resolution drawn by the operators committee also was approved and will be presented to the state corporation commission with the request that an appropriate order be issued. The order under which the present proration is being carried on expires Dec. 31.

The committees had found, after as close study of the situation as was possible, that the market demand for Oklahoma crude in January would not exceed 650,000 barrels daily; for February, 665,000 barrels daily and for March 675,000 barrels daily.

Proration of Oklahoma City pool and East Earlsboro to 60 per cent of the potential in January and February and 50 per cent in March will be asked of the state commission. The various pools of the Seminole district and the Allen, Sasakwa, Asher and Lovell pools would be prorated by 20 per cent throughout the three months.

The committees' estimate on the potential and actual production of the state under the proration schedule as outlined is as follows:

January	Potential Daily Production	Estimated Production Under Proration
Oklahoma City	140,000	84,000
East Earlsboro	80,000	48,000
Seminole, et al	349,500	279,600
Rest of State	230,000	230,000
Total	799,500	641,600
February		
Oklahoma City	200,000	120,000
East Earlsboro	80,000	48,000
Seminole, et al	340,000	272,000
Rest of State	230,000	230,000
Total	850,000	670,000
March		
Oklahoma City	300,000	150,000
East Earlsboro	70,000	35,000
Seminole, et al	327,000	261,600
Rest of State	225,000	225,000
Total	922,000	671,600

Figures released the past week by Ray M. Collins, umpire, showed that proration in November reduced production to less than the allowed amount in the Seminole fields and others contiguous thereto. On the basis of daily averages these pools performed as follows:

	Potential	30 days Allowed Production	30 days Actual Production	Average Actual Production 1 day
Allen (shallow)	19,906	477,744	471,485	15,716
Asher	5,034	138,699	126,702	4,223
Bowlegs	30,812	739,488	730,557	24,352
Carr City	13,003	312,072	306,980	10,233
Earlsboro	45,717	1,097,208	1,080,190	36,006
Little River	57,625	1,383,000	1,361,455	45,382
Mission	20,279	486,696	473,814	15,794
Maud	11,121	266,904	270,106	9,004
Pearson	1,075	25,800	26,149	872
Searight	11,364	272,736	278,022	9,267
Seminole	32,421	778,104	766,016	25,534
St. Louis	58,575	1,405,800	1,377,180	45,906

Other pools under proration, Oklahoma City, East Earlsboro, East Little River, Sasakwa, the Wilcox sand production and the Lovell pools, being handled on different basis than the foregoing have not been reported on by the umpire for November. That they are performing equally as well as the ones on which his compilation was made is shown by the fact that the state as a whole clings closely to the 650,000 barrels daily average fixed in the corporation commission order.

No vote was cast against the renewal of proration for the first quarter of 1930. Several company representatives announced themselves as not voting. Those who voted for the resolution were: Indian Territory Illuminating Oil Co.; Shell Petroleum Corp.; The Texas Co.; Skelly Oil Co.; Mid-Kansas Oil & Gas Co.; Prairie Oil & Gas Co.; Empire Oil & Refining Co.; Tidal Oil Co.; Sands Petroleum Co.; Barnsdall Oil Co.; Wirt Franklin Petroleum Corp.; Devonian Oil Co.; Sinclair Oil & Gas Co.; Gypsy Oil Co.; Superior Oil Corp.; Amerada Petroleum Corp.; Pure Oil Co.; Continental Oil Co.; Houston Oil Co. of Texas; Carter Oil Co.; Mid-Continent Petroleum Corp.; Phillips Petroleum Co. and T. B. Slick. Companies represented in the meeting who preferred to be shown as not voting were Burke-Greis Oil Co.; W. C. McBride, Inc.; Coline Oil Co.; Pierce Petroleum Corp. and Minnehoma Oil & Gas Co.

Operators Ask Foreign Producers To Join Restrictive Program

Staff Special
TULSA, Dec. 14

IN A resolution adopted by the Mid-Continent operators meeting held Dec. 12, foreign producers were asked to fit their development programs to the program of restriction now in effect in the principal producing areas of the United States.

Wirt Franklin, who has headed the movement for a tariff on imported oils, introduced the topic to the meeting, which was held primarily to decide upon continuance of proration in Oklahoma. Mr. Franklin said that domestic producers had been working in harmony for several months to get the production down to the level of demands but that during this time the imports had increased. He said he objected to the loss of American markets to American producers.

James A. Veasey, general counsel for the Carter Oil Co., pointed out that under the Wilson act foreign operators cannot agree to fix the amount of oil to be imported. Mr. Franklin suggested that there is nothing to keep Venezuelan operators from starting on the field end, restricting their drilling activities to achieve the desired result. He warned that the industry cannot expect the same measure of cooperation in this country that has characterized recent months if every reduction in output here is promptly made up by an increase in imports.

The meeting voted unanimously in favor of the sentiment expressed by Mr. Franklin, leaving it to a committee to draft the formal resolution. William N. Davis, president of the Mid-Continent Oil & Gas Association,

who had been elected chairman of the meeting, appointed Wirt Franklin, James A. Veasey and Harry H. Smith, secretary of the association, as a committee to write the resolution. It is as follows:

"WHEREAS, at a state-wide meeting of Oklahoma oil operators held the 12th day of December, 1929, to consider the conserving of the oil resources of the state, it was resolved without opposition to apply to the Corporation Commission of Oklahoma for an order extending for a further period of ninety (90) days, beginning January 1, 1930, the present conservation measures now in force in Oklahoma, and

"WHEREAS, at such meeting it was the unanimous sense thereof

"(1) That the oil producers of the United States, proceeding separately in the important oil producing states of California, Texas, Oklahoma, and Kansas, which represent 88.28 per cent of the total production of the United States, are now so regulating their drilling and producing activities as to prevent irrational development and overproduction of petroleum in the United States, thereby preventing the two types of waste which are the twin obstacles to true conservation, namely: the escape of gas into the air which uneconomic practice in turn leaves oil in the ground which would be recovered under orderly and scientific methods of development and production.

"(2) That these constructive measures for conservation in the United States in the main are the result of voluntary action on the part of the operators concerned and these efforts may break down unless producers in Venezuela and other foreign countries adopt and apply similar conservation practices, because the problem of petroleum conservation is international and not merely national in its scope.

"NOW, THEREFORE, BE IT RESOLVED:

"(a) That the attention of oil producers in Venezuela and other foreign countries impressively be directed to the conditions recited in this resolution.

"(b) That in the interest of international conservation of petroleum which in turn will bring about the conservation of the petroleum reserves of the United States, that the producers of oil in Venezuela and other foreign countries urgently be requested in their individual capacities and by such legal means as may be at their disposal, to adjust their respective drilling and producing activities to the conservation program now effective in the United States."

Colombia Seeks Oil Offers

WASHINGTON, Dec. 16.—Colombia is anxious for Americans to make contracts for the petroleum resources of that republic. Its desire has been announced by the legation here by the promulgation of a message sent by Joseph A. Montalvo, minister of industries.

"The government" says his message, "is disposed to enter into contracts for the exploitation of oil, submitting such contracts to the approval of Congress and basing them on the petroleum bill which was considered by the last congress but was not invested (enacted) into law, due to lack of time."

Senor Montalvo is forehanded. He is convinced that the administration in power, which has the power of introducing bills as the "government" in a country such as Great Britain has, will be able to get the bill through this congress. He wants to prepared with contracts needing only signature and approval when the bill passes. The bill in question was framed by Montalvo's department after consultation with foreign experts, including H. Foster Bain, former chief of the Bureau of Mines.

The proposed law will permit exploration of all lands except those in which there is private ownership in the sub-soil. There are grants of lands in which the republic retained sub-soil rights although the surface is in private hands. Such lands, in theory, are subject to exploration. The proposed statute would permit exploration on units running as high as 100,000 hectares, or 240,000 acres, instead of as under the present law, of 15,000 hectares.

Third Gusher Well In Van Field

(By Telegraph)

HOUSTON, Dec. 15.—Completion of the third "Gusher" well in the new Van Oil field of Van Zandt County, east Texas, has brought the time nearer when decision must be made on the building of a pipe line from the territory to the gulf coast terminal of the Pure Oil Co. at Smiths Bluff. Until such construction has been justified by completed wells indicating the general producing value of the field the crude is being handled in tank car shipments from Chandler via the Cotton Belt Railroad.

The third well completion is No. 1 Tunnell on acreage belonging to Shell Petroleum Corp. which was pooled with leaseholds of other companies in the Van field for unified development. It is an east offset to Pure Oil Co.'s Jarman discovery well and a northeast diagonal offset to the Pure's second completion in the field. When tested Dec. 14 in sand found at 2662 feet the Tunnell well made 70 barrels an hour through a nine sixteenths-inch choker. Estimates of its open flow capacity ranged from 10,000 to 12,000 barrels.

The Pure's number one Jarman discovery increased its production from 260 barrels daily to 1112 barrels daily when allowed to flow through a larger choke early in the week. The south offset known as number one Thompson made 1751 barrels daily through a nine sixteenths-inch choker, under 390 pounds pressure.

All three wells are capable of greater production than they are being allowed to make under choked operation. Future completion which will have to be made in conforming to leasehold requirements will be similarly pinched to safeguard pressures and maintain steady production at economic levels.

Best estimates at present available credit the Van territory with possible exploited production of about 25,000 barrels daily within the next two or three months. Under the unified shipment practiced the Pure Oil Co. gets 80 per cent of the field's production and other companies party to the agreement share in the remaining 20 per cent.

Gas Lift Patent Case Is Dismissed

(By Telegraph)

TULSA, Dec. 16.—Holding that the prior art had been displayed Federal Judge Pollock dismissed the suit of Jones-McLaughlin Inc., against the Amerada Petroleum Corp., in an opinion filed Saturday. The suit was brought for alleged infringement of patents held by the plaintiff on use of gas for gas lift when a complete cycle of gasoline plant operation, use of gas for lifting oil and separation of gas from the oil•lifted was performed. The suit was tried last April.

The patent was issued in 1914 and a number of companies operating in California and a few in the Mid-Continent have been licensed by Jones-McLaughlin. The court said that the three steps involved in the cycle had long before been worked out and that the three do not produce when combined any new and useful result.

PITTSBURGH, Pa., Dec. 14.—Headquarters of the West Virginia Pipe Line Co., subsidiary of the Valvoline Oil Co., are to be moved from Pittsburgh to Butler, Pa. Valvoline has a refinery near Butler.

The Editors' Viewpoint

National Petroleum News

Fake Stock Promoters Are Still Rampant

MANY in the oil industry have taken it for granted, following the large number of prosecutions of fake stock promoters by the postoffice authorities a few years ago, that the operations on the public of this type of parasite have been greatly curtailed.

Such is not the case, however. With the nimble wits of the sharpster, these individuals have moved their headquarters, changed the names of their enterprises, changed the character of their solicitation for investment funds, and are still widely using the mails to defraud those who can ill afford to lose their savings.

The postal authorities are still making their prosecutions, but for each promoter who is finally driven to cover and sent to jail there are hundreds still sending out letters and circulars urging the investor to "hurry and get in on the big pay-off."

The National Better Business Bureau devotes a good deal of attention to fraudulent oil stock promotions, but their warnings do not reach, in most cases, the class of people that need that warning the most, the class that despairs of accumulating enough through their savings to take care of them in later years and succumbs to the lure of the fake oil stock promoter who glibly promises to return those hard earned savings ten or a hundred fold.

Those in the oil industry should do all they can to prevent the fleecing of persons in their community by the fakers. The legitimate oil industry suffers from the bitterness in the minds of those who finally awaken from their dreams to find themselves duped of what it has taken them years to save.

NATIONAL PETROLEUM NEWS is constantly appealed to for information regarding oil companies soliciting investments by mail and the chances are that agents and heads of oil companies in every community receive similar requests. The sad part of it is that too often the requests are from those who have already invested their money. There are a few general conditions surrounding the solicitation by mail to invest in oil securities—or securities of any kind for that matter—that would-be investors can be told to look into. The existence of any of these conditions in any individual case almost automatically stamps it as a fraudulent transaction.

In the first place, the fact that the solicitation comes by mail and from some alleged brokerage house in a distant city, should cause the offer to be looked upon with suspicion. The would-be investor should ask his local banker to write to the company soliciting the sale of securities and ask some of the questions concerning an investment a banker naturally asks. Nine times out of ten, the banker's letter will never be answered.

Again, if there is a promise of exceptionally large dividends, the offer can almost certainly be put down as fraudulent. The established oil companies over the past ten years have made only average earnings. In the few cases where individual companies have made large earnings, due to favorable conditions for that company which do not exist for most companies, the company has made no appeal to the public to invest its funds. Officers and present stockholders have been only too willing to invest further.

Again, if there is an appeal, sometimes by telegraph, to "hurry up or lose the opportunity of a lifetime," that too stamps the offer as fraudulent. The greatest lure of the faker is to secure funds from his victims before they have time to think the proposition over calmly or ask the advice of some outsider. The whole game is to get the would-be investor to act on impulse, rather than reason. The very fact the person solicited is urged to act "today" is the best reason in the world for dropping the entire matter.—V. B. G.

A Chicken Comes Home to Roost

THE arrest of a trucker for a large Cleveland coal dealer and an attendant at a service station of a large oil company has brought to light one of the evils of commercial charge account at service stations.

The two men are accused of swindling the coal company out of approximately $41,000 the last five years by charging gasoline to the company which it did not receive, the service station attendant meanwhile selling it and splitting the receipts among the pair. Police say they have confessed.

Had there been no such thing as a commercial charge account, there would not have been in the hands of the two men an instrument with which they could have worked their alleged swindle so easily and for so long a time. As it was it was mere chance that another trucker accidentally saw his name signed to a charge slip for 25 gallons of gasoline he had not received and reported the fact to his company.

The commercial discount to charge accounts is countenanced by the code of ethics but it is disappearing from practice in many states. It is an evil even when it is used in a legitimate way—R. B. S.

An Opportunity

THE luncheon club has become a factor of real importance in American life. Thousands of these clubs throughout the country every week listen to discussions of problems of the day. Members of the clubs form opinions from information they receive at the meetings and pass them on in their contacts with business and social acquaintances.

The luncheon club would be an excellent place to direct public opinion to the tendency to increase gasoline taxes to an excessive figure. Jobbers who are members should welcome an opportunity to speak on the subject of the taxes a motorist must pay. Facts to make an interesting address on this and other subjects may be obtained by writing the American Petroleum Institute.—J. C. C.

They are STILL swinging smoothly

—after most joints are in the junk pile

Wheaton Swing Joints are *still* swinging smoothly, *still* reducing strains and leaks, *still* saving money, long after most swing joints are buried in the junk pile.

Why?

Because Wheaton Swing Joints are built of SOLID BRONZE—tough, tempered, long-lasting bronze, which neither crystallizes nor corrodes. *Because* Wheaton Swing Joints are *designed* by the same engineers that gave the oil industry Wheaton Truck Tank Faucets. *Because* Wheaton Swing Joints have that same perfect *fit and finish* which are so markedly characteristic of *all* Wheaton Products.

More and more storage stations are discovering the *difference* in swing joints. More and more are saving *leaks and replacements* by coming to Wheaton—for the smoothest-swinging and longest-lasting swing joints their money can buy.

Send for a Wheaton Swing Joint today. Test it on your pipe line. If you are not convinced that it has the softest, smoothest, easiest swinging action of any swing joint ever known, return it for credit or refund.

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Newark, New Jersey

Empire Brass Mfg. Co., Ltd., London, Ontario, Canadian Manufacturers and Distributors

Wheaton

FAUCETS · VALVES · JOINTS · COUPLINGS · FILLERS · NOZZLES · FITTINGS

ROYALTY men, through the Mid-Continent Royalty Owners Association, are showing signs of waspishness. For some months they have campaigned through their publication against the proposed new lease contract written by a committee of attorneys appointed by the Mid-Continent Oil & Gas Association. This contract, not yet acted upon by the association, was drawn to take cognizance of the trend toward unit development, acreage pooling and the like, and embodies the provision that royalty interests are pooled when and if the leases are. That, of course, could affect only leases written on this form, in the event it comes to be used in the industry.

The royalty people have met this by drawing a lease contract of their own and they threaten to distribute it throughout the oil producing country of Oklahoma and Kansas, with an advertising campaign in country newspapers. That campaign would direct the landowners' attention to what the royalty people conceive to be the iniquities of the royalty proposal.

The form drawn by the royalty owners has not been put into circulation. It follows pretty closely the Producers' 88 now in fairly general use except that it cuts out a provision which is much to the liking of the operator. That is the provision that a dry hole drilled on a lease prior to discovery of oil or gas does not terminate the lease provided the operator begins another well by the time the next rental date arrives. The royalty owners, in the form they propose to circulate, end the life of a lease with the drilling of a dry hole prior to discovery.

The whole thing has the makings of a quarrel. The royalty people say they have not been understood or appreciated. Their association has formally endorsed the various proration plans in Oklahoma and Kansas and officers say it has been something of a job to keep some of the turbulent spirits in line.

Some of the royalty owners, both farmers and those who buy part of the farmer's interest, are quickly spoiled by success and in that they differ not from some operators. With a few thousand dollars a day or week or month coming in, they yearn to pick a fight with Walter C. Teagle or whoever at hand is of imposing stature.

It is understood that the royalty owners' association directors have frequent meetings to keep somebody from putting on his war feathers and paint, emitting loud whoops and rushing into court to upset proration agreements.

One of the persistent threateners is J. Edward Jones, of New York City, who sends long telegrams from time to time to the Tulsa press which must cost him a heap of money. He set forth his views again a week or so ago and said that he had employed eminent counsel to examine into the legality of the Oklahoma proration orders as issued by the state corporation commission.

Counsel having duly searched the statutes and other available literature had brought in their finding of opinion that if Mr. Jones just chose to bust loose he could upset all existing proration agreements and, they hinted darkly, or rather he did, through the columns of the newspaper, the anti-trust laws could be brought to bear successfully upon the situation as it now exists, of even date.

E. H. Griswold recently was appointed assistant chief engineer of the Continental Oil Co. He started as a production engineer in the old Marland Oil Co. He has contributed several outstanding papers to technical associations and has done much work in repressuring and gas lift. He lives in Ponca City

Mr. Jones said he did not intend to do anything about it right away, but he thought some form of treaty might be arranged between the oil operators and the royalty owners. If the oil companies would agree to stop wildcatting and abandon the unitization idea, he thought it would be a fair exchange for the royalty owners to continue giving their acquiescence to proration and that was his idea of about an even swap.

With all the legal nitroglycerin his counsel had stored in his basement, Mr. Jones believed such an offer to be in order.

While Mr. Jones continues to talk about opposing unitization, other royalty men of comparable stature say they oppose only the forced pooling of royalties and that it is not their concern what the companies do with the leases. That would seem to be a fair view to take of the matter.

They object to pooling royalties because, they say, a royalty buyer would rather take his chance on his judgment being good on what he buys than to have his profits diluted by throwing in all the indifferent properties that are found on the edge of the pool.

It is very well, they say, for a big oil company which has something in every pool that is opened to play averages, but the royalty buyer is in a pool here and there and hasn't enough territory to average on.

We have no doubt that the royalty men can make quite a disturbance if they start scattering their lease form through the prospective oil territory. And, so far as we have plumbed operating opinion, the oil companies have no intention of going out with the proposed lease form which would pool royalty interests.

With these major and minor premises in mind, the conclusion would seem to be that the two factions should meet and bury this particular hatchet.

Before you buy an Orifice Meter . . . .

Ask yourself these questions:

1. Will the meter be easy for my field men to clean?
2. Is it easy to zero?
3. Has the Instrument a uniform scale chart?
4. Does the pen travel uniformly over the entire chart range?
5. Has the meter a machined steel float that is powerful enough to defy dirt and that will not clog easily?
6. Can my field men assemble this orifice meter quickly?
7. Can it be easily read?
8. Are the parts interchangeable?
9. After installation, how about the maintenance cost? Will it be low?
10. Is the meter ACCURATE—without inherent error—requiring no field calibration?

If you buy a Foxboro Orifice Meter, the answers to these ten questions are "yes".

The Foxboro Guarantee, sealed to each Recording and Controlling Instrument. This guarantee assures you of years of accurate, dependable service.

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THE COMPASS OF INDUSTRY

Foxboro meets every requirement

Foxboro Orifice Meters meet every requirement of an orifice meter that is to do its job efficiently. In fact, leading oil and gas engineers specified what they wanted—and Foxboro built the Instrument.

For nineteen years the charts of Foxboro Orifice Meters have been accepted as the accurate records of wet or dry gas flow.

The Foxboro Orifice Meter is made in three standard differential ranges of 20, 50 and 100 inches of water. A Foxboro Engineer will be glad to tell you just which type is best suited to your needs. Write this engineer at the nearest Branch Office.

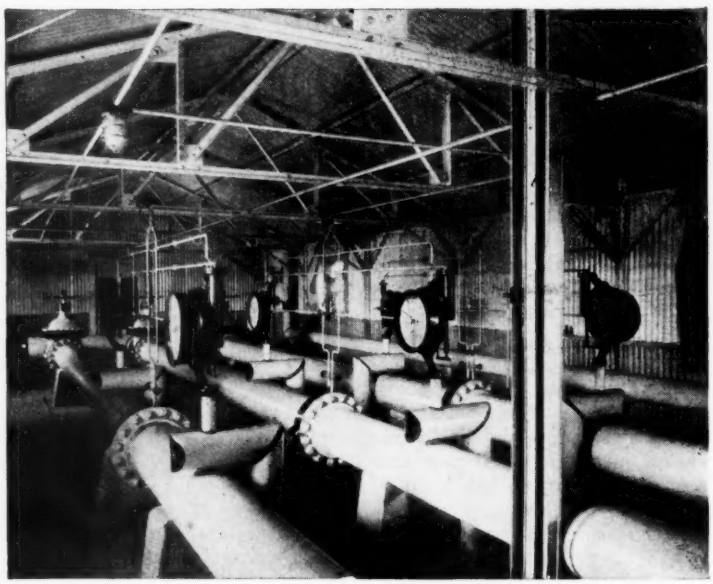

Photo above shows Foxboro Orifice Meters measuring gas at the North Station of the Oklahoma Natural Gas Company, Oklahoma City, Oklahoma.

INSTRUMENTS *for* CONTROLLING, RECORDING *and* INDICATING TEMPERATURE, FLOW, HUMIDITY *and* PRESSURE

Unit development will go ahead anyway, perhaps not in the ideal form some have envisioned it, but as successfully as most people expected all along.

* * *

W. C. Eyl, consulting geologist, Lexington, Ky., has joined the staff of Petroleum Exploration, one of the companies headed by E. A. Durham, of Sistersville, W. Va. Petroleum Exploration operates in Kentucky, Texas and New Mexico. Oklahoma and Kansas properties are in the name of the Wiser Oil Co.

* * *

Dr. A. F. Melcher, authority on porosity of oil sands, has opened offices in Bradford, Pa., under the name Petroleum Engineering Laboratories. Paul Phillippi is in charge. Consulting work on sand analysis, valuation, geologic and production problems are carried on. This district has grown steadily in appreciation of the value of core analysis as a guide to flooding operations.

* * *

D. W. Moffitt, vice-president of the Mid-Continent Petroleum Corp., with Mrs. Moffitt has gone to Miami, Fla., to spend the winter months.

* * *

F. G. Shreves, of Okmulgee, president of the Denver Producing & Refining Co., accompanied by Mrs. Shreves will sail from San Franisco Jan. 8 for a four months world tour.

* * *

John L. Garlough, consulting geologist of Wichita, Kans., has been elected president of the Kansas Geological Society. Anthony J. Folger, Gypsy Oil Co., was elected vice-president and Perry Hanson, of the Amerada Petroleum Corp., secretary-treasurer. The latter position was filled the past year by Mr. Folger.

Directors elected were R. B. Rutledge, Skelly Oil Co., the retiring president; Leo Fortier, Shell Petroleum Corp.; L. W. Kesler, Sinclair Oil & Gas Co., and Roy Hall, Gypsy Oil Co.

* * *

Tulsa is in its state of metal fogginess common to this time of the year. Each department store claims to have the only authentic Santa Claus and the kids daily grow more skeptical. One of the newspapers did its bit by sponsoring the showing of a deceased whale, on farewell tour of the country and a bout to settle the argument as to the merits of a boxer and a rassler was held, with the rassler winning. It has been such a frenzied existence that the votors abstractly defeated a bond issue last week.

* * *

Married: In Amarillo, Bayard C. Low and Miss Florence Keys. Mr. Low is of the Panhandle field staff of the Humble Oil & Refining Co.

* * *

Died: In Okmulgee, H. E. P. Stanford, attorney and oil man. He was 61 years old. His widow and one son survive him.

Dr. A. F. Melcher, formerly of the United States Geological Survey and later of the Marland Oil Co.

Stock Market News—from "The Takeoff," published by the Mid-Continent Map. Co.: "Title Hoppers' Corp. of America was sold very heavy today and the stock is full of shorts—keep away from it.

"Amalgamated Corp. passed its dividend today, causing a flurry in Quit Claim Deed, Ltd., through its connection with Amalgamated in Top Leasing one per cent bonds with warrants.

"Chili Con Carne, new stock, should be a purchase from here on with so many lease and royalty investors having lost in the market. We understand the major con carne operator in these parts contemplates opening branches, thus making it easier to cater to the brokering public."

* * *

Died: In a Tulsa hospital, H. L. Culpepper, secretary-treasurer of the Cal-Cul Oil Co., Okmulgee, from injuries sustained in an automobile accident. J. J. Callahan, president of the company, was also injured but is recovering. The car in which the two were driving to Tulsa collided with a small car, killing a woman passenger in the latter.

C. B. Goddard clicked last week in the Madill district of Oklahoma with a 100-barrel well. He recently embarked on his career as an individual operator after spending some years as superintendent of southern Oklahoma operations for the Humble Oil & Refining Co. The Humble decided in 1928 to quit Oklahoma and sold its properties to the Carter Oil Co. Mr. Goddard is playing the shallow territory, this good producer, his first, being in the 500-foot stuff.

* * *

Walter Hazel, sales manager of the International Derrick & Equipment Co., Columbus, O., has spent several weeks in the Mid-Continent. Part of his work here was the investing with the ceremonial robes of office one James H., or Jimmy, Dye, new vice-president of the company who takes charge of the Oklahoma and Kansas territory.

Mr. Dye last summer resigned as manager of the Charleston producing division of the Pure Oil Co., where he had spent 10 years. He has established his residence in Tulsa and has started telling the trade just what Ideco line consists of.

* * *

Otto D. Donnell, president of the Ohio Oil Co., recently was elected a member of the Corporation of Case School of Applied Science, Cleveland, O. In effect, he is a trustee, or regent. Mr. Donnell is an alumnus of Case.

* * *

Oil men recently elected as officers of the Tulsa Traffic Club were A. H. Evans, traffic manager of the Akin Gasoline Co., to be vice-president; L. W. Witte, assistant traffic manager, Mid-Continent Petroleum Corp. and C. J. Payton, traffic manager of the Sinclair Oil & Gas Co., to be directors. S. J. Myers, traffic manager of the Independent Oil & Gas Co., retired as president of the club.

* * *

Died: In Tulsa, Walter H. Albro, one time head of accounting work for the Devonian Oil Co. He was 69 years old. His widow and one daughter survive him.

* * *

Married: In Oklahoma City, Mark B. Danford and Miss Florence Hopkins. Mr. Danford is a production engineer for the Carter Oil Co. in the Seminole district and is the son of Mark O. Danford, tax commissioner of the Midwest Refining Co., Casper, Wyo.

* * *

Ten Years Ago

(From National Petroleum News, Dec. 17, 1919)

Department of Justice begins prosecution of oil companies for alleged violation of law on fuel oil sales, charging exorbitant prices were realized.

A. L. Derby, Garden & Smith and Ray Watts merge holdings under new corporate name of Derby Oil Co.

On Tanks and Buildings . . . on all Oil-Field Equipment . . .

Petro Paint Resists Fumes, Vapors, Discoloration

AT last, the Petroleum Industry has found a utility paint that stands the gaff of oil-field service!

Petro Paint stands up amazingly, even under the severe conditions of the field or the refinery. It provides a white paint that *stays* white—colored paints that do not fade or darken appreciably. Its remarkable resistance to all destructive factors brings efficiency in upkeep—substantial economies in paint maintenance.

Here's Why Petro Paint Exactly Meets Your Requirements

1. Petro Paint is highly resistant to discoloration by sulphur fumes and aqueous vapors.

2. It is adapted for systems designed for all types of surfaces.

3. On tanks it curtails evaporation. It has the remarkable quality of retaining its original brilliance and cleanliness for a long period of time without fading.

4. It has greater durability under all conditions.

5. It leaves a good surface for repainting.

6. It can be applied under adverse temperature conditions. It does not crawl on cold surfaces.

7. It hides better than other mixed paints—is very economical.

8. Petro Paint gives you an opportunity to use color effectively wherever you wish.

Send for further information

Full details of the Petro Paint line have been compiled in our Technical Bulletin No. 4. At your request, a copy will be mailed to you immediately. Or, if your problem requires a special study, we will be glad to send a du Pont technical representative to work with you.

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Petroleum Sales Department NP-12

INDEPENDENCE SQUARE PHILADELPHIA, PA.

Chicago, Ill. **San Francisco, Cal.**

Three 30,000 Barrel Wells Brought In In Oklahoma City Field

By John Power
N. P. N. STAFF WRITER

TULSA, Dec. 14

THREE new wells were added to the Oklahoma City pool during the past week. One extended production a location south. In the general Seminole area developments in the Cromwell sand production of the East Little River pool were strong enough to indicate that a pool of real importance may have been discovered in this formation.

Wildcatting in the Texas Panhandle brought forth a 2000-barrel well a mile from the nearest production in Gray county. A new well in the Voshell area of McPherson county, Kansas emphasized the importance of this pool, which may develop into something of more than merely local significance.

Two good Siliceous lime producers and the best sand well in the field to date was the crop at Oklahoma City for the week in the way of producers. Of the most importance was the sand well, Skelly Oil No. 1 Hoops, NW NE of 31-11N-2W. Making 7500 barrels the first six hours, it is the best sand well in the field, and extends the productive area a location south.

Running higher structurally than the Sinclair Oil & Gas Co. No. 1 School Land a half mile to the west, it is also considered to have no little bearing on the possibilities of the area immediately east of the present southeast tip of the field.

Coline Oil Co. added another huge well to the list of astonishing lime producers when its No. 2 Warren in the center of the NW NW SW of 18-11N-2W blew in while being bailed. Estimated as good for at least 30,000 barrels daily, it had to be shut in a few minutes after it came in because the separators which were installed could not begin to handle the production. Sixty barrels of crude was gaged in five minutes, but no estimate was made of the amount of production lost during the same time. There is a north offset to this well which is a lime producer.

Indian Territory Illuminating Oil Co.-Foster Petroleum Corp., discoverers of the field, were not to be left completely behind in the completing business. They got one.

It was the No. 2 Vern, in the center of the NE SW SE of 13-11N-3W. At a total depth of 6535 in the lime the well made 10,486 barrels in seven and one-half hours, and was then shut in. Although a good well, it is along the western edge of the field where there have been some short lived lime wells completed.

Prospects for a likely sort of Cromwell sand oil field are looming in the East Little River area, where the principal Wilcox production has been showing little inclination to stray very far away from the famous Smith lease of the Mid-Continent Petroleum Corp. Present indications are that the Cromwell production may cover the same ground as the Wilcox does, and a lot more beside.

The newest of the Cromwell sand wells to be completed is a well of the Magnolia Petroleum Co. in the NE NE of 8-7-7. It is making 2300 barrels natural from the sand at 3146-3186 feet.

Although of course proving little, the presence of Cromwell sand gas in eastern part of the original Little River pool is looked upon by many as indicative that the Cromwell may be found productive over a large area.

WILDCAT results in the Texas Panhandle were productive enough to make it quite a week for this part of the Mid-Continent. The most important well was the Wilcox Oil & Gas Co. well in section 35, Blk. 3, I.&G.N. survey, Gray county, northeast of the Bowers pool. and a mile from the nearest important production. Originally coming in for but 200 barrels, at a total depth of 2811, the well has been drilling itself in until it is now making some 2000 barrels per day, along with 32 million cubic feet of gas.

Other wildcat showings included the Dillard No. 1 Feurneaux, section 202, Blk. B-2, H.&G.N. survey. Getting a show of oil and gas at 3160, at 3163 the well began spraying four barrels per hour. In addition it is making eight million cubic feet of gas per day. The well is said to be south of the granite ridge, which makes it doubly important. If this is the case, it is the first well in the Panhandle south of the ridge to produce.

Another wildcat some five miles south of the Bowers pool checked in for 16 million cubic feet of gas per day from the gas pay at 2810-12. It was the Travis & Rieger, No. 1 Mackie, in section 114, Blk. B-2, H.&G.N. survey.

At the present time the Voshell area is to Kansas what the Oklahoma City pool is to Oklahoma—the big noise. The Mid-Kansas Oil & Gas Co. test in the center of the NE NW NE of 9-21S-3W, is the latest addition to the pool. It is good for 1700 barrels per day, although it needs the help of the swab.

Wells in this pool are not very vigorous producers, as there is comparatively little gas with the oil. Opinion is not united as to the exact nature of the pay, although the Wilcox is given the credit generally. It was found at 3278-85.

* * *

Notes on the Week

For southern Oklahoma a big gas well was of principal interest. It was the Wirt Franklin test in the center of the NE NW SW of 9-2S-6W. Forty-one million cubic feet of gas per day was reward for drilling the pay from 3125-38. The gas was at 1055 rock pressure.

* * *

Gas was the principal attraction in extreme western Kansas, also. McKenna et al in their test in the center of the north line of the NW NW of 29-33S-36W, Stevens county had six and one-half million cubic feet of gas per day from a sandy lime at 2615-2792. There was a show of gasoline in the gas. The 6-inch pipe was set at 2625. No water has appeared as yet, and the well is to be deepened.

* * *

Sinclair Oil & Gas Co. has an interesting test in the NW NE NW of 5-9-6. There is 1500 feet of oil in the hole from the Wilcox topped at 4315-37.

* * *

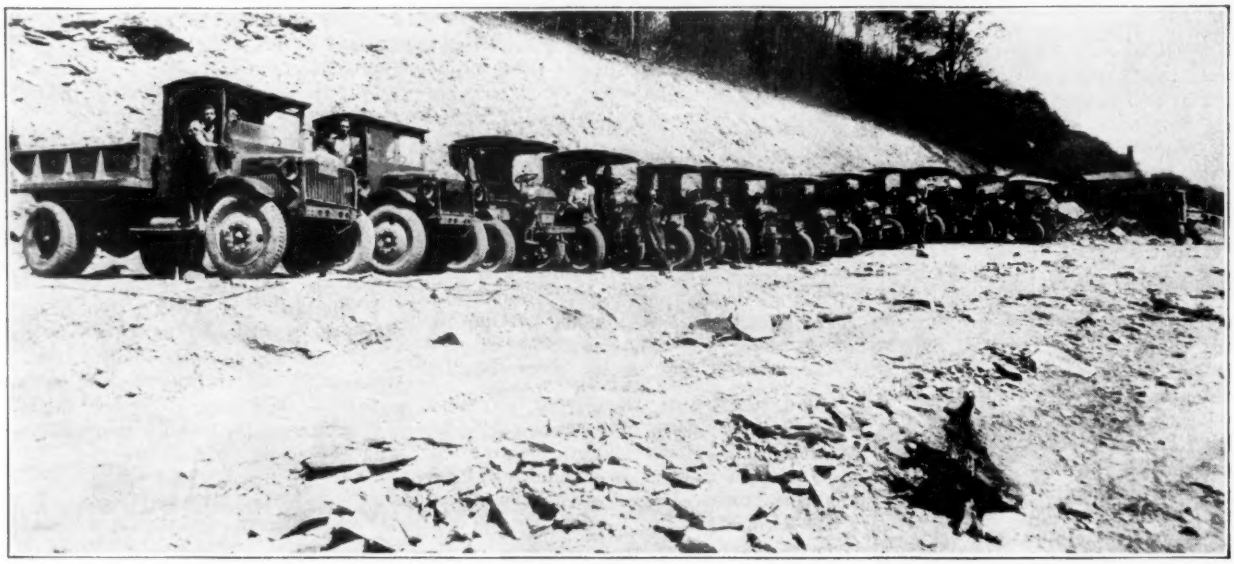
Bell Oil & Gas Co. is reported getting ready to start its 5000-barrel refinery in Pampa, Texas Panhandle.

* * *

The I.T.I.O. et al No. 1 Thomas Fuzzell, Oklahoma City, which broke all state records for size when it was drilled in a few weeks ago, is to be opened again to production December 21. Considerable interest is being shown in this well, as there is some argument as to the amount of ultimate yield from even the biggest of the lime wells.

"After conclusive tests on all makes of cars...

We find that FISK Transportation Heavy Duty Tires last longer than any other make"



A few of the FISK-equipped fleet of Philadelphia Trucking Company at work on William Penn Highway.

THROUGH the heart of Pennsylvania—over the Allegheny Mountains—runs the William Penn Highway. Up near the famous Horse Shoe Curve, the Philadelphia Trucking Company has been straightening four bad curves and building three miles of new road, including six major cuts and three tremendous fills.

With trucks turning, straining, jerking—lurching over rocks, ruts, roots—inflicting on tires the most gruelling service—the contractor depends exclusively on FISK Transportation Heavy Duty Cords. This is what the Company's President, R. B. Wenner, Jr., writes:

"After conclusive tests on all makes of tires, we find that FISK Transportation Heavy Duty Tires stand the punishment better, last longer and have less chafing than any other make."

Let us help you with *your* tire problems. When you are ready, our Engineering Department will make a thorough analysis of your equipment needs without charge or obligation.

Also send for a free copy of the new FISK Wheel and Rim Manual. Its up-to-date information and detailed instructions will aid you in keeping operating costs at the lowest possible figure.

THE FISK RUBBER COMPANY, INC.

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Write for this book today.

Burbank Field Chapter of A.P.I. Hears Papers on Belting

BURBANK, Dec. 12

SELECTING the proper belt for the job, and seeing to it that the belt gets the correct care, both on and off the job, is the biggest part of eliminating oil field belting troubles, in the opinion of many who attended the December meeting of the Burbank chapter of the American Petroleum Institute Production Division.

D. L. Trax, Gypsy Oil Co. chairman of the engineers sub-committee on belting specifications of the A.P.I. belting sub-committee, read a paper on the manufacture, use and care of belts. This paper, prepared by H. H. Wright, Gypsy Oil Co., had been read previously at the August meeting of the Drumright chapter*. Following the reading of this paper, Harold Decker, Tidal Oil Co. read a paper dealing with the various types of clamps in oil field use.*

The use of belt dressings, particularly sticky ones, was particularly deplored. For rubber belts it was suggested that sufficient vegetable castor oil dressing be used on the surface to keep it soft and pliable. Hair belting it was said, should not be dressed unless on a drive where mineral oil was apt to get on it. In such case, vegetable castor oil may be used. In running all belts, if particular attention is paid to keeping the belt ways clean, and free from grease or oil, better service can be obtained from the belt.

In determining the proper size belt to be used on a given job great care should be taken to estimate the load which the belt will be called on to carry. The strength of a belt depends upon the quality of its materials, the number of plys and the width.

Inevitably, when the subject of belts comes along, a discussion of belt clamps is never very far behind. Mr. Decker confined his paper to oil field belt clamps. When it is remembered, said Mr. Decker, that over 50 per cent of all belt troubles are caused by the clamps, the necessity for using good quality, clamps, properly designed, is easily understood.

In checking up on 88 belt jobs recorded against 21 wells of one oil company, Mr. Decker said that 48 of the jobs, or 54½ per cent had been caused by the clamps. Of the 48 failures due to clamps, 72 per cent of these were due to bolt failures.

Aside from the possibility that a part of the bolt breakage is due to inferior quality of the bolts themselves, it is generally regarded as true that a considerable portion of bolt trouble is traceable to the design of the clamps, or to the manner in which they are applied.

It is especially important that the belt ends be cut square, at right angles to the edge of the belt. Equally important is the line of the bolt holes, which must parallel the end of the belt after it has been cut. A clamp which has been put on out of square with the edge of the belt will put a severe strain on one edge of the belt and on the bolts which neither of them can stand for long.

It was pointed out that in the use of a bar type clamp, better service probably can be obtained from one in which the bolt holes are as close to the belt as possible without weakening the clamp. Bolts in this position will be subjected to less leverage than would be the case were they farther from the belt.

*See NATIONAL PETROLEUM NEWS, page 37, Aug. 28, 1929.

Two Bureau of Mines Men Killed in Explosion

TULSA, Dec. 14.—In an explosion Dec. 13 at the Bartlesville station of the U. S. Bureau of Mines, R. R. Brandenthaler, petroleum engineer and Meredith Miles, junior petroleum engineer, were killed. Brandenthaler was burned to death at once, his body later being recovered from the concrete pit where he was working when the explosion occurred. Miles died in a hospital several hours later. Two other Bureau of Mines men, Robert E. Holt, machinist and Gustav Wade, engineer, were burned about the arms.

The cause of the explosion is as yet undetermined. Instructions came from Washington to delay investigation until a bureau official arrives. The scene of the explosion was the interior of a derrick which was erected under Brandenthaler's supervision two years ago to conduct experiments on natural and artificial flow of wells.

R. R. Brandenthaler

The derrick was erected to represent the depth of an oil well and in a pit at its base was a tank filled with sand, to simulate an oil reservoir. Tubing and casing, built to scale, represented the equipment used underground in an oil well. In the concrete pit were manifolded connections. Compressed air and gas could be introduced directly into the tank or admitted through the tubing.

Brandenthaler and the other men were working about the derrick when the explosion came. It is supposed that an explosive mixture had been found, settling in the pit where Brandenthaler was, and in some manner this was ignited. Experiments had been conducted with the apparatus from time to time and it was to have been demonstrated Dec. 17 to the Mid-Continent section of the American Institute of Mining & Metallurgical Engineers as one of the feature events on the program arranged for a Bartlesville meeting. The meeting has been postponed to January.

Brandenthaler was one of the best known of Bureau of Mines engineers. He was 39 years old and had been in Bureau service five years. Prior to going into government service he spent several years in production engineering work with the Union Oil Co. of California. He wrote a number of bureau reports and was a specialist in gas lift and repressuring work.

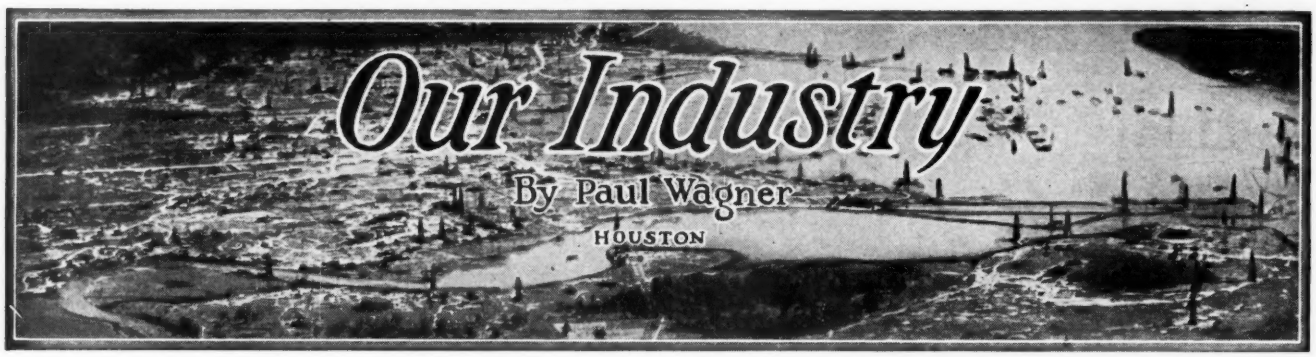
He made a special investigation of Michigan producing conditions this year at the request of that state's conservation bureau and was of great service in improving drilling and producing practices. He is survived by his widow and one child.

Miles, the junior engineer, had been in government service for about a year. He leaves a wife. He had worked with Brandenthaler on the experimental work for which the derrick was used.

Static Spark Ignites Oil Well

NEW YORK, Dec. 12.—While cleaning a bit on the drill pipe in an oil well of the Standard Oil Co. (New Jersey) in Central Argentina recently, a charge of static electricity caused a spark to jump from the hose end from which steam was being used to the bit, igniting the gas in the well.

The flow of steam through the wire-bound hose developed a charge of static electricity. Subsequent tests revealed that when steam was passed through the hose and the end was held near the ground, a spark one-half to one inch long leaped the gap. Grounding the winding at the connected end eliminated the danger.



CHARLES GODDARD, formerly a director of the Humble Oil & Refining Co., Houston, who resigned several months ago to form the Goddard Co., Simpson building, Ardmore, Okla., is already proving successful in the field of independent production. His company recently completed a 100-barrel well, producing 38 plus gravity crude, at 515 feet, in the Madill, Okla., territory. It costs about $3000 to drill and equip such Madill district wells. The Goddard Co. owns 700 acres of leases in the Madill territory. Besides Mr. Goddard, the company is composed of C. F. Dillingham, vice president; and A. E. Ewell, secretary-treasurer.

* * *

Charles Mercer, formerly of the Continental Supply Co., at Pampa, Wichita Falls, Fort Worth and Midland, is now assistant treasurer of the Midland Gasoline Co., with headquarters at Coleman, Texas.

* * *

E. D. O'Malley is a recent addition to the Cisco district producing department of The Texas Co., where he is attached to the engineering staff.

* * *

R. T. Kendrick, formerly a district foreman in the Ranger-Breckenridge territory of The Texas Co., is now connected with that corporation's field forces in California, following a recent transfer.

* * *

Joe Waltner, otherwise known as "Pullman Joe," was musing at McCamey, West Texas, the other day. He expects to make one more big boom, he says, after which he hopes to retire from the business of feeding the multitudes along the frontiers of America. His next move, when he sells out his oil field restaurant at McCamey, is to be for the vicinity of the Boulder Dam project.

Joe gets his nickname from his "Pullman Cafe," which became famous in the Breckenridge development days of the general Ranger territory. Since then he has been among those present at Desdemona, Mexia, El Dorado, Smackover, Cotton Valley, Bristow, Pyote, Wink, and Jal, New Mexico. He gets into a territory at its beginning, builds up a trade and generally sells out near the height of the boom. The most food he ever served in one day, "Pullman Joe" avers, was at Desdemona when he catered to 3000 persons.

* * *

G. L. Griffin, Gulf Coastal manager of the Chapman Valve Manufacturing Co., Indian Orchard, Mass., announces the establishment of a factory warehouse at Houston, carrying a full line of brass, iron and steel valves. He will have associated with him at Houston as salesmen Messrs. A. B. Harrison and H. B. Kier.

* * *

Robert Imbt, individual operator and consulting geologist of San Angelo, went to West Texas several years ago as district head of geological work for the Pure Oil Co., working under Texas division headquarters at Fort Worth. He resigned about a year ago to go in business for himself, electing to continue his headquarters at San Angelo. He is widely known in the Permian salt basin territory, where he has recently specialized.

* * *

James H. Jenkins, manager of the Associated Oil Co.'s production activities, with San Francisco headquarters, is recovering from an operation for appendicitis. Before his transfer to San Francisco, nearly a year ago, Mr. Jenkins was vice president of the Tidal Oil Co. of Texas at Fort Worth.

* * *

R. Ogarrio, production vice president of The Texas Co., returned to New York headquarters the middle of November after a business trip to Houston and other southwestern points.

* * *

Charles A. Stewart is now identified with the Shell Petroleum Corp.'s geological department and is stationed at San Antonio. He resigned as division geologist of the Dixie Oil Co., Inc., subsidiary of Standard Oil Co. of Indiana, to accept his new position.

* * *

Ralph A. Liddle, chief geologist of the Pure Oil Co.'s Texas division at Fort Worth, has been identified with the Dawes organization since completing his service with the Standard Oil Co. of New Jersey in South America several years ago. He is a native of Argyle, New York, where he was born Nov. 18, 1896. After getting his A.B. degree at Cornell, he took up geological work for the Magnolia Petroleum Co., in central north Texas, serving that corporation from 1916 to 1918. Later, in 1919-1920, he was associate geologist attached to the Bureau of Economic

Robert Imbt

Ralph A. Liddle

Geology at Austin. He joined the Standard of New Jersey, for work in South America, in 1920. In a part of the years 1918-1919 he was with the 472nd Engineers, United States army. Mr. Liddle holds membership in the Societe Geologique de France, the American Institute of Mining & Metallurgical Engineers, the Geological Society of America, the American Association of Petroleum Geologists and the Southwestern Geological Society.

* * *

Wallace E. Pratt, land and geological director of Humble Oil & Refining Co., Houston, has been appointed by President John Y. Snyder of the American Association of Petroleum Geologists, to be chairman of the general business committee for the New Orleans meeting, March 20-22, 1930. A committee to consider revision of the A.A.P.G. constitution includes Max W. Ball, Denver; Donald C. Barton, Houston; Sidney Powers, Tulsa; and George R. Stevens, Shreveport.

* * *

O. L. Matthew, assistant manager of the Compania Petroleo de Holandesia "La Corona," S. A., direct subsidiary of the Royal Dutch-Shell group in Mexico, left Tampico in November for England on the Steamship Rio Bravo. His return was uncertain, but it was expected that he would be transferred to another arm of the Royal Dutch-Shell group.

* * *

If piscatorial records at Tampico may be relied upon then R. T. Bibbe of the Mexican Gulf Oil Co. failed to set up a record for the largest tarpon ever taken by rod and reel when his catch failed to measure out. Bibbe's tarpon measured seven feet, seven inches in length and required 55 minutes to land. The record length of a tarpon similarly caught was one inch longer than that landed by Bibbe. Both fish were captured in the Panuco river.

* * *

George R. Couper, now of the lands and lease division of The Texas Co. of California, was identified with the Wichita Falls division office of The Texas Co., until a few months ago. He has been with the company 10 years, first serving the oil accounting department of The Texas Pipe Line Co., at Houston. Afterwards he occupied various positions before reaching that of chief clerk at Wichita Falls, which he vacated to go to California.

* * *

L. H. Freedman, geologist and engineer, connected with the Snowden & McSweeney Oil Co., is back at Fort Worth operating headquarters after a business trip to San Antonio and West Texas.

* * *

Charles B. Williams, appointed assistant division manager of The Texas Co., at Fort Worth, when H. N. Pardee was transferred to Tulsa, several months ago, was formerly Cisco district superintendent in the producing department. He assists L. E. Barrows, long in charge at Fort Worth as division manager. Dick N. Harrell, previously at Wink, Winkler County, took Mr. Williams' place at Cisco and A. B. Capers succeeded Mr. Harrell at Wink.

James M. Charlton

* * *

James M. Charlton of the land department of the California Co. subsidiary of the Standard Oil Co. of California, makes his headquarters at Dallas. He moved there more than a year ago, when Warner Clark, southern division manager, transferred Texas executive headquarters from Colorado, Mitchell county, to Dallas. Mr. Charlton had previously lived in West Texas since Ranger deep lime territory development days, representing the Humble Oil & Refining Co., the Gulf Production Co., and the California Co., consecutively.

* * *

Robert B. Campbell, consulting geologist, recently moved his San Angelo offices to 800-802 Western Reserve building.

* * *

East Texas district offices, in charge of Sam M. Semple, have been established at Tyler by the Prairie Oil & Gas Co. Headquarters for Texas operations are maintained at Eastland, in Eastland county, general Ranger territory.

* * *

William J. Millard and Robert E. King are making a geological survey of The Texas Co.'s holdings in Columbia, working out of Bogota as headquarters.

* * *

Paul R. (Pete) Smith, long identified with the Pure Oil Co's. producing organization and recently in charge of its Arkansas district at El Dorado, has been transferred to Fort Worth as executive assistant to B. S. SoRelle, Texas division manager. He takes the place of R. Lane Grigsby, who was transferred to El Dorado, where he assumes the activities vacated by Mr. Smith. Before going to El Dorado about a year ago, Mr. Smith was chief scout of the Pure at Fort Worth. He was succeeded in that position by Paul R. Martin, who continues to occupy it.

* * *

Charles G. Tomson of the land and lease division of The Texas Co. of California was formerly identified with the United States Geological Survey. About ten years ago, when working in the general Ranger territory of Texas, he ran the first survey through the Desdemona field, which the old-timers in the region will recall by the colorful name of "Hogtown."

* * *

McElreath & Suggett, formerly Wichita Falls operators, have opened offices in the Milan building at San Antonio. A. R. McElreath of the firm is now spending virtually all his time at San Antonio and in surrounding territory.

* * *

"Mike" Mitchell, drilling contractor of Houston, has the contract on a wildcat test for oil being drilled by W. M. Roeser on the Moody tract, 10 miles northwest of Palestine, Texas, between Montalba and Blackfoot. It is the fourth test of the Roeser interests in the general territory and four and a half miles northwest of the last previously drilled.

* * *

W. F. Batson of Odessa, Texas, is division superintendent of The Texas Co.'s producing operations in the Permian salt basin of West Texas and southeastern New Mexico. He has supervision over producing operations west of San Angelo and Colorado City. Joseph Merkt of Parks, Stephens county, is division superintendent in the eastern part of the central north Texas territory. Both work with L. E. Barrows, division manager, at Fort Worth.

* * *

Ralph A. Birk, now a consulting geologist of Wichita Falls, was identified with the Amerada Petroleum Co., and stationed at Ardmore, Okla., before moving to Texas some months ago. He was born at Iowa Park, in sight of oil fields of the present Wichita Falls district. His first oil industry work as a geologist was with The Texas Co., from 1916 to 1919. Previously, he was engaged from 1913 to 1916 as a construction engineer on the Panama Canal project. He served seven months in the army at the time of the World War, as a master engineer, senior grade. He is a member of the American Association of Petroleum Geologists.

Expect Early Session in Kansas To Enact New Tax Laws

By Lawrence E. Smith
N. P. N. STAFF WRITER

TULSA, Dec. 14

GOVERNOR CLYDE REED having asked the revenue committees of the Kansas house and senate to meet with him in Topeka, Dec. 17, it is expected that formal call will soon be issued for a special session of the Kansas legislature to act upon the report of the tax code commission appointed by the governor early this year. Chief among the reasons for the appointment of this commission was the desire to find new sources of revenue to meet the constantly mounting, cost of government, hence it is probable that the legislature will follow in the footsteps of the commission and impale those sources that have been found.

The commission recommends:

A graduated income tax and a flat rate corporation income tax, both without exemptions.

A gross production tax of two per cent on the gross value of all oil and gas produced in the state.

A levy of two per cent on gross premiums of domestic insurance companies with no disturbance of the present premium tax on foreign insurance companies.

Reduction of the widow's exemption under the present inheritance tax law from $75,000 to $30,000 and in class B a reduction from $5,000 to $1,000.

Extension of poll tax to cities of the first class, repealing the provision for working out the tax on the road.

Increase in fees of certain offices.

Taxation of common carrier buses and trucks on basis of miles traveled and capacity; subjecting of all other trucks operated for hire to franchise tax and authorization of cities to tax persons operating trucks in connection with their business.

Of principal interest to the oil industry is the proposed gross production tax, although the income tax that is proposed will affect all who do business in the state. Apart from the recommendations of the commission, the governor has indicated publicly that he will ask for an increase in gasoline tax of one cent.

The Mid-Continent Oil & Gas Association, through Secretary Harry H. Smith and a delegation of Kansas operators, appeared before the tax code commission during the summer and filed a brief in opposition to gross production tax. That the argument made by them was misinterpreted is shown in this paragraph from the commission's report:

"In arriving at the two per cent rate the commission gave due consideration to the hazardous nature of the oil industry and to the necessity of avoiding the imposition of a tax calculated to curtail further exploration or development. The oil operators presented statistics to the commission indicating the amount and value of the production and the amount of taxes paid by many representative companies.

"They also gave it as their opinion that oil producers in Kansas are paying under the present plan of assessment taxes on their oil properties equivalent to a gross production tax of 2 per cent. While the rate fixed is necessarily arbitrary, yet we believe it is not excessive and that the resulting tax will not prove burdensome on the industry."

The argument made by the association was to the effect that the Kansas industry is already paying, under the present ad valorem method of taxation, about 2 per cent. The commission proposes to add this much in the form of a gross production tax without abolishing the greater part of the ad valorem taxes now paid. Thus, on this basis, for the whole the tax would be nearly doubled and the heaviest burden would fall upon the old, small well properties that are either produced now at a loss or are so close to it that an additional 2 per cent tax would make it impossible to continue their operation.

The commission recommends that the tax be assessed against both the working interest and the royalty or landowners' interest, that the pipe line which runs the oil be charged with the collection of the tax, charging it back to the producer and the royalty owner.

In Oklahoma the 3 per cent gross production tax is in lieu of all other taxes. The Kansas commission recommends that the proposed tax there be in lieu of the present ad valorem tax on oil and gas leases and oil and gas wells, but all equipment used in drilling and producing continue to be taxed on the present ad valorem basis.

The commission proposes that the state retain two-thirds of the gross production tax, returning one-third to the county. That such a method would result in local taxing authorities levying a much heavier burden on the equipment which they would be permitted to tax is certain. It was pointed out in the brief filed by the Mid-Continent association that such would be the result.

The commission includes in its report a general statement of receipts and disbursements by the state in 1928 which tells its own story. The state took in from all sources that year $22,641,083.05 and spent $25,284,545.43. It was, therefore, in the "red" more than two and one-half million dollars.

From 1911 to 1928 the cost of state and local government has increased tremendously. Schools gained 298.07 per cent in cost; county governments 200.46 per cent; city governments 186.60 per cent and state expenses, including the soldier bonus, leaped 129.17 per cent. The per capita property tax for all purposes jumped from $38.22 in 1920 to $50.24 in 1928. As compared with the year 1923 the property tax for all purposes gained 22.1 per cent in 1928, although the population gain was only 0.8 per cent.

That the industry of Kansas will make a fight in the legislature is certain. It has adapted itself to the present system of taxation, severe as it is in some localities. Now it is faced with increases ranging up to 100 per cent and the destruction of values, under the proposed gross production tax, of many properties that are merely being nursed along in the hope that some day they will yield a fair return and contribute their modest amount of oil to the nation's needs at a time when it is required.

Pure Oil Superintendent Killed in Auto Crash

CHARLESTON, W. Va.—A. W. Hickman, superintendent of the Cabin Creek division of the Pure Oil Co., was killed in an auto accident and his wife, son and daughter were injured on Dec. 11. Mrs. Hickman was seriously injured. All three are in a Charleston hospital.

Mr. Hickman has been in the employ of the Pure Oil Co. and the original Pure Oil Co. for more than 20 years. He served the greater part of this time in the Ohio River Producing division, with headquarters in Sistersville, W. Va. He was transferred to the Charleston division last summer and the offices were moved to Dawes.

On the Western Front

By Jack N. Westsmith
Los Angeles

BILL FRAINER, superintendent of Rio Grande's operations at Elwood has been a mighty busy young man during the past month in trying to regulate the output of his company's wells so that the fields total does not exceed the allowable of 30,000 barrels.

Although Bill has been at Elwood for only one year he is comparatively a veteran in Rio Grande. He was formerly employed at the company's fields at Winkler County, Texas, and in New Mexico.

* * *

Hubert C. Ferry, formerly supervisor of franchise and rights of way for Union Oil Co. has been transferred to the company's legal department. H. H. Hart has been appointed to take the position left vacant by Mr. Ferry.

* * *

Rufus J. Pilcher, assistant manager of Richfield Oil Co.'s aviation department has been appointed to the national contest committee of the National Aeronautical Association, of which Orville Wright is chairman. This committee has complete charge of all air races and other contests such as: altitude flights, and endurance flights.

Mr. Pilcher is well known in aviation circles, having served in the World War and is at the present time commanding officer of the 476th pursuit squadron of the air corps, stationed at Long Beach.

Robert E. Allen, superintendent for Continental Oil Co.'s operations in Ventura county prior to the Maryland merger and later advising engineer to Umpire F. C. van Deinse, is now working with Paul Grimm, umpire of the Santa Fe Springs, Elwood and Ventura Avenue fields.

Bob is well liked among operators in these fields, although it is his duty to keep them in line and to suggest ways and means of keeping the output down to somewhere near the allowable production.

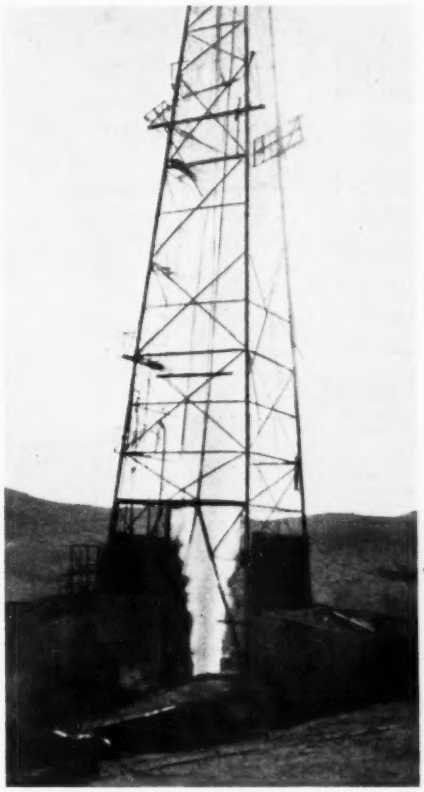
* * *

G. B. Shea, formerly assistant petroleum engineer in the San Francisco field office of the U. S. Bureau of Mines, was recently appointed assistant production engineer under H. C. Fowler, acting chief petroleum engineer of the Bureau, with headquarters at Washington, D. C.

Mr. Shea is well known on the Pacific Coast through his work on safety in oil fields, and has written a report on "Safety in Natural Gasoline Plants," which will be released by the Bureau within a short time.

* * *

Alexander Anderson, a pioneer in the study of surveying oil wells, has returned to his headquarters at Fullerton, Calif. after making a study of operating conditions in the Mid-Continent fields. He has not let on as to whether he thinks oil wells inland are more or less crooked than on the coast.



Tremendous gas flow from Continental Oil Co.'s Elliott 12-8 *wrecking the derrick*

* * *

The 26th Engineers held their first formal reunion Dec. 7 at the Belmont Beach Club and counted noses. Dr. A. A. Fricke, major of the regiment, sponsored the meeting and seemed well satisfied with the turnout. This group of men is composed entirely of California engineers, the majority of whom work in the oil fields.

* * *

L. J. Metcalf, assistant manager of refineries for Union Oil Co., has been appointed to three general committees, Fire Prevention, Corrosion, and Oil Pollution, of the engineering division of the American Petroleum Institute.

Mr. Metcalf, who has occupied the position of assistant manager of refineries for four years, fills the vacancies on the committees created by the recent resignation of Ralph J. Reed, who retired to take up personal work.

* * *

Walter H. Davis will take the place in the organization left vacant by the resignation of J. H. Hill, local manager of Pittsburg Equitable Meter Co. Alfred Schawalder is to be transferred from the company's home office to take care of the service department in the Los Angeles office.

* * *

B. I. Graves, executive of the Associated Oil Co. was recently made general sales manager, with jurisdiction over all sales activities of the company.

Mr. Graves has been with Associated for over 20 years, having entered the employment of the company as assistant chief clerk in the pipe line department. Since that time he has held various capacities that have thoroughly familiarized him with the sales problems of the company both in this country and abroad.

* * *

S. H. Atkinson, assistant general manager of the MacClatchie Manufacturing Co. together with A. O. Nelson, Mid-Continent representative for MacClatchie, is making a three week trip to study conditions in the oil fields of Oklahoma, Texas and Louisiana.

* * *

Ed. Russell, of Taylor, Tex., is now employed by Milham Exploration Co. in its operations in the Buttonwillow field, northwest of Bakersfield, Calif. Although he spends much of his time in the Los Angeles offices he also superintends drilling of a deep test now under way at Buttonwillow.

Completions in Oklahoma and Kansas, Week Ended December 14, 1929

OKLAHOMA

Atoka County

Company	Well No.	Location	Depth	Initial Prod.
Earnest	1	C S½ SW SW 6-1-14 E	T.D. 600	Dry

Beckham County

Sayre	1	SWc NW SE 24-9-23 W	T.D. 2696	5M

Carter County

Cotton Belt	11	SEc NE NW SW 10-4-2 W	1306-1436	20
Magnolia	2	NW NE NW 4-2-3 W	3800-4208	30
Carter	9	SE NE NW 30-1-3 W	2597-2780	20M
Ven-Mex	1	NWc 29-1-3 W	2717-3506	108
Ven-Mex	1	SE NW SE 23-1-3 W	2183-2640	90
Magnolia	2	SWc NW 20-1-3 W	3462-3471	10
Carter	5	SW SE SW 20-1-3 W	2914-3473	20

Cotton County

Shasta	1	NEc SW 31-1-9 W	2228-2232	40
Franklin	7	SWc SE 35-1-10 W	2147-2167	50
Franklin	5	C SW SE 35-1-10 W	2148-2176	40
Franklin	1	NWc 4-4-10 W	T.D. 3419	Dry

Creek County

McCready et al	3	NWc SW SE 30-17-11 E	T.D. 1823	Dry
Sherry et al	1	C SW NW 22-17-10 E	T.D. 2972	Dry
Keaton et al	1	SWc NW NW SW 32-18-11 E	T.D. 2262	Dry
Parrafine	8	SEc NW NE 34-16-11 E	1967-1997	30
Deadman et al	2	CEL SE SW 17-17-10 E	2072-2122	25
Texas	5	CEL SE SE 14-17-10 E	1892-1930	45
Irelan et al	2	NWc NE NE SW 3-17-10 E	1019-1032	3M

Hughes County

McCulloch	1	NW SW NE 28-6-8 E	T.D. 4610	Dry

Jefferson County

Beck	3	NWc SE SW SE 34-6-5 W	1225-1237	100

Kay County

Parrish et al	5	SE NE SW 25-28-1 W	T.D. 743	Dry
De-Camp-Lancer	1	SEc NE 24-28-1 W	T.D. 3860	Dry

Lincoln County

Flynn-Morgan	1	SWc NE 1-16-5 E	T.D. 4012	Dry

Muskogee County

Jolly	4	NEc NW 2-14-18 E	T.D. 1244	Dry
Johnston et al	3	NW NE NE 23-13-18 E	612-616	¾M

Okfuskee County

Champlin	7	SE NE SE 15-11-11 E	2494-2504	50
Summitt Drlg	1	SEc SW 23-11-11 E	2040-2060	30
Champlin	3	NW SW SW 14-11-11 E	2507-2509	135
Superior	1	SEc 6-11-7 E	T.D. 4901	Dry
Regal	10	NWc SE NE NE 11-10-11 E	T.D. 2070	Dry

Osage County

Peters et al	2	SEc SW 23-25-9 E	T.D. 2250	Dry
Lewis Prod	1	NWc 23-25-7 E	T.D. 2700	Dry
I. T. I. O.	372	NE NW SE 22-27-11 E	1672-1690	30
Okla. Power & Water	127	NE NW NW 9-20-10 E	410-422	.633M
Okla. Power & Water	128	NW SW SW 4-20-10 E	393-402	9/20M
Peters	2	NW NE NW 27-27-11 E	1695-1715	20

Okmulgee County

Kirkland-Son	5	NWc SW NE NW 20-15-13 E	1463-1528	10
Misener	4	C NW SE 10-15-14 E	1614-1617	50

Pawnee County

Johnson	2	NE SE NE 27-20-9 E	2148-2183	80

Pontotoc County

Continental	1	SWc 18-5-5 E	2435-2445	25
Independent	2	SE NE NW 19-5-5 E	2368-2416	40
Markham et al	1	SEc NW 1-4-7 E	2178-2185	3
Prairie	1	NWc SW 28-5-8 E	812-826	100

Pottawatomie County

Prairie et al	3	SW SE NE 17-7-4 E	4087-4120	1315
Independent	2	SW SE SW 35-8-4 E	4035-4037	205
Magnolia	1	NWc 22-7-4 E	4143-4162	1540
Magnolia	1	NW NE SW 22-7-4 E	3657-3736	10M
Minnehoma	3	NEc SE 16-7-4 E	3825-3969	130
Skelly	2	SW NW SW 16-7-4 E	4170-4179	830
Gypsy	3	NEc SE 17-7-4 E	4049-4060	545
Superior et al	1	SWc NW 3-8-4 E	T.D. 4477	Dry
Keister-Manning	1	NEc SW 9-8-4 E	T.D. 4715	Dry
Gypsy	1	NW NE NE 23-6-4 E	T.D. 4060	Dry

Seminole County

Magnolia	5	SW SE SE 2-7-6 E	T.D. 3266	Dry
Empire et al	1	SE SW NE 3-7-6 E	T.D. 3690	Dry
Magnolia	3	SE NE NE 14-7-6 E	T.D. 3341	Dry
Reiter-Foster	1	SEc SW 30-7-6 E	T.D. 1190	Dry
Denver Prod. & & Ref.	1	SW SE SW 27-7-5 E	T.D. 4345	Dry
Skelly	1	NE SW NW 13-6-7 E	T.D. 4763	Dry
Burke-Greis	2	SW SE SW 32-10-6 E	4085-4120	170
Amerada	3	SE SW NW 17-9-6 E	4263-4287	1710
Burke-Gries	2	SWc 17-9-6 E	4214-4235	1515
Gypsy et al	8	SW SE SE 18-9-6 E	4236-4257	2367
Gypsy et al	9	SE SW SE 18-9-6 E	4241-4263	1095
Gypsy et al	10	SEc 18-9-6 E	4218-4235	485
Carter	2	NEc 19-9-6 E	4202-4214	1925
Gypsy	2	NW SW SE 5-7-7 E	4213-4233	880
Gypsy	3	SE SW SE 5-7-7 E	4202-4227	1792
Sinclair	8	SW SE SE 5-7-7 E	4222-4249	685
Twin State	1	SE SW NW 7-6-8 E	3174-3200	40
Blackwell	3	SWc NW 13-5-7 E	4200-4214	360
Barnsdall	1	SWc NE 13-5-7 E	2760-4268	630
Magnolia	2	NW NE SW 13-5-7 E	4294-4300	565
Magnolia	1	NEc SE 14-5-7 E	4262-4272	380
Mid-Continent	4	SEc NE 14-5-7 E	4216-4230	80
Prairie	2	SE NE SW 5-7-7 E	4193-4218	1240
Prairie	3	NE SE SW 5-7-7 E	4195-4223	1505
Prod. & Ref. Corp.	1	NE NW SE 19-9-6 E	4137-4164	4850

Stephens County

Murphy	17	SE NW SW 12-2-8 W	2029-2055	65
Shell	1	SW SE SE 2-1-4 W	3260-3687	75
Ven-Mex et al	2	SEc SW 35-1-8 W	T.D. 2227	Dry
Fossett et al	1	SE NW NE 18-1-8 W	T.D. 2555	Dry

KANSAS

Butler County

Empire	2	NW NE SE 15-27-6 E	T.D. 3101	Dry

Chase County

Selby	9	SEc NE NE SE 35-22-9 E	2454-2480	30

Coffey County

Darby	1	SEc NW 13-23-14 E	T.D. 1644	Dry

Cowley County

Landon et al	1	SW NW SE 23-30-4 E	T.D. 2991	Dry

Elk County

Fleming et al	1	SWc 9-29-9 E	2640-2641	100

Greenwood County

Marshall et al	1	NE SW SW 12-24-11 E	T.D. 1938	Dry
Prairie	1	SWc NW 4-24-12 E	T.D. 1798	Dry
Mendenhall et al	2	CSL NW NW 9-25-13 E	1473-1478	10
Mid-Continet	15	NW NE NW 14-24-12 E	1728-1741	25

Harvey County

Walton	1	C SE SW 13-24-2 E	T.D. 3365	Dry

Lyon County

Mortlock et al	1	NWc NE 24-20-11 E	T.D. 2066	Dry

McPherson County

Mid-Kansas	1	C SE SW 11-20-5 W	T.D. 4054	Dry
Shell	1	NEc NW 12-20-2 W	2991-3003	270

Saline County

Dixie	1	NWc NE 10-16-3 W	T.D. 3602	Dry

Sedgwick County

Ramsey et al	2	SWc 2-26-1 W	T.D. 3512	Dry
Burnett	1	NWc SW 27-26-1 E	T.D. 3500	Dry
Prairie-Slick	2	SE SW NE 1-26-1 W	3361-3367	220
Bu Vi Bar et al	9	NE NW SE 12-26-1 W	3345-3349	605
Deal et al	1	SW SE SW 15-26-2 E	2924-2927	120
Shell	1	SEc 10-26-2 E	2895-2898	165

Completions in California, Week Ended December 7, 1929

Elwood

Company	Well No.	Location	Depth	Init. Prod.
Barnsdall-Rio Grande	Luton Bell 9	....	3409	3200

Fruitvale

Standard Oil Co	Kern county Land Co. 5-2	....	4777	146

Huntington Beach

Huntington Signal Oil Co.	No. 1	....	4644	100
Standard Oil Co	Thompson 7	....	3401	177
Texas Holding Co	Houston 5	....	5210	100

Kern Front

Chanslor-Canfield Midway Oil Co	No. 29	....	2233	200

Long Beach

Belleview Oil Synd	No. 1	....	7394	104

Maricopa Flats

Company	Well No.	Location	Depth	Init. Prod.
North American Consolidated	Kerckhoff 5	....	3376	2200

Potrero

Associated Oil Co	Prairie 2	....	3844	25
Associated Oil Co	Potrero Club 1	....	5371	100

Richfield

Arrowhead Oil Co	Zuckerman 1	....	4504	130

Santa Fe Springs

Bandini Petrol Corp	No. 17	....	7172	4060
General Pet. Corp	S. F. C. 189 D.	....	7951	2000
General Pet. Corp	S. F. C. 191 F.	....	8150	1200
Shell Oil Co	G. H. & N. 21	....	7921	1821

Seal Beach

Continental Oil Co	Bixby 30	....	5547	790

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended December 14, 1929

OKLAHOMA

Atoka County

Company	Well No. & Farm	Location	
Earnest	1-Burton	NWc SE SE 1-1-13 E	

Carter County

Carter	4-Jennings	SEc 28-1-3 W	

Creek County

Shaffer et al	1-Lewis	SEc SW SW 10-15-8 E	OWD
Sheridan	1-Skinner	C SW SE 1-16-11 E	

Company	Well No. & Farm	Location
Murta et al	1-Smith	SEc NE 33-16-10 E
Pure	27-Berryhill	CWL NE NE 18-17-12 E
Reiter-Foster	3-Littlehead	CWL SW SE 17-17-10 E
Deadman et al	3-Shepard	NEc SE SW 17-17-10 E
Texas	6-Baker	SEc 14-17-10 E
Operators	4-Grayson	SEc NW SE 17-19-9 E
Operators	5-Grayson	NWc SE 17-19-9E

(*Continued on Page 55*)

New Field Operations in Oklahoma, Kansas, North, North Central, East Central, Panhandle and West Texas, Week Ended December 14, 1929

(Continued from Page 54)

Company	Well No. & Farm	Location	
Jefferson County			
Beck	4-Seay	SWc NE SW SE 34-6-5 W	
Bridwell	2-Seay	SE SW NW 29-6-5 W	
Kay County			
Wentz	23-Welch	NEc SW 17-28-1 E	OWD
Wentz	2-Foster	NWc SE 17-28-1 E	OWD
LeFlore County			
Colline	1-Jackson	NEc NW NW 33-7-26 E	
Logan County			
Currier et al	1-Katcher	SW NE SW 34-17-4 W	
Marshall County			
Westheimer	1-Davidson	SW SE NW 30-5-6 E	
Muskogee County			
Mills et al	2-Foreman	SWc NW SE SE 14-13-18 E	
Arthur	1-Deen	CNL SE NE NW 34-15-18 E	
Jolly	3-Carolina	SWc NW SW 9-15-18 E	
Mack Drlg	2-Richards	NWc SE NW NE 23-15-15 E	
Okfuskee County			
Superior	1-Bird	NWc SE 23-12-11 E	
Jarvis-Holm	2-Buckley	NW NE NW 21-10-11 E	OWD
Oklahoma County			
Sinclair	1-School land	NEc SE 36-11-3 W	
Sinclair	3-School land	NW NE NE 36-11-3 W	
Sinclair	2-School land	SE NE NE 36-11-3 W	
I. T. I. O. et al	1-Borden	NE SE SE 23-11-3 W	
I. T. I. O. et al	2-Knox	SE NE SE 14-11-3 W	
I. T. I. O. et al	1-Knox	NEc SE 14-11-3 W	
I. T. I. O. et al	4-Jones	NE SE NW 31-11-2 W	
I. T. I. O. et al	5-Jones	SEc NW 31-11-2 W	
I. T. I. O. et al	3-Jones	SE NE NW 31-11-2 W	
I. T. I. O. et al	1-Sudik	NEc SW 31-11-2 W	
Skelly	3-Hoopes	NE NW NE 31-11-2 W	
Slick et al	2-Hoopes	SWc NE 31-11-2 W	
Sinclair-Amerada	5-Kinter	SE NE SE 30-11-2 W	
I. T. I. O. et al	5-Emmerson	NE SE SW 30-11-2 W	
Mid-Kansas	1-Trosper	SE NE SE 24-12-2 W	
Okmulgee County			
Jake Rutz	9-Hill	SEc NW SW SW 25-13-14 E	
Jones et al	1-Roberts	NEc NW SW 26-13-12 E	
Selby	17-Flint	C NW NE 26-14-14 E	OWD
Levine et al	2-Warner	NWc SE NW 24-14-12 E	
Osage County			
Union Oil & Mining	3	CSL NW 32-23-10 E	
Pawnee County			
Sears et al	7-Wiggs	CNL NE NW 35-20-9 E	
Stanley-Brewer	1-White	SWc SE 6-20-8 E	
Pontotoc County			
Universal	1-Martin	NEc 36-5-6 E	
Pottawatomie County			
Sinclair et al	1	NWc 17-9-5 E	
Pure	1-Mayes	SEc NW 9-8-5 E	
Continental et al	1-Brandenburg	SEc 34-8-4 E	
Magnolia	1-Dixch	NE SE SE 12-7-4 E	
Gypsy	1-Swartz	NW SE NW 2-7-4 E	
Magnolia	1-Lynn	NEc 21-7-4 E	OWD
Seminole County			
Prairie-Slick	2-Tiger	SW NW NE 8-7-7 E	
Prod. & Ref	4-Jefferson	SE NW SE 19-9-6 E	
Prod. & Ref	1-Coker	C SW SW 12-7-8 E	
Prod. & Ref	1-Proctor	C SE NE 11-7-8 E	
Carter	2-Campbell	SW NW SW 20-9-6 E	
Carter	3-Chowning	SE NW SW 19-9-6 E	
Carter	4-Chowning	NE SW SW 19-9-6 E	
Texas	8-Magruder	SE SW NW 19-9-6 E	
Amerada et al	2-Scott	CWL NE NW SW 19-9-6 E	
Gypsy	4-Taylor	NW SE SW 19-9-6 E	
Texas	7-Magruder	SW SE NW 19-9-6 E	
Amerada	1-Lasley	CEL NE NW SW 19-9-6 E	
Amerada et al	4-Fullerton	SE NE SE 19-9-6 E	
Gypsy	4-Walker	SWc SE 5-7-7 E	
Twin State	1-Charlie	NE SE SW 8-6-6 E	
Independent	1	SEc NE 8-6-6 E	
Barnsdall	2-Lusty	NWc NE 13-5-7 E	
Texas	2-Lewis	SEc NW 13-5-7 E	
Stephens County			
Pace et al	11-McMasters	NWc SE NE 13-2-8 W	
Magnolia	8-Burke	SWc NE NW NE 34-1-8 W	OWD
Ellis Drlg	10-Nigh	SWc NW 34-1-8 W	
Wagoner County			
Boyle et al	3-Sugar	NWc SW 17-17-16 E	
Cherokee Public Service	2-Smith	SWc NE 36-16-17 E	
KANSAS			
Barton County			
Prairie	1-Davidson	NWc SE 4-16-11 W	
Butler County			
Alladin	2-Linger	NE SW NE 24-27-3 E	
Chase County			
Polhamus et al	3-Leedy	CSL NW NW 36-22-9 E	
Chautauqua County			
Griffin-Bell	7-Oliver	NWc SW SE 1-32-10 E	
Cowley County			
Roth-Faurot	1-Holt	SW NE SE 12-32-4 E	
Dickinson County			
Prairie	1-Rumold	NW SW NE 12-16-2 E	
Elk County			
Fleming et al	1-Shrader	NWc 16-29-9 E	
Mann et al	1-Hazlett	C SW SE 12-31-8 E	
Sharky-Ames	1-Dawson	CWL NW NW 22-31-10 E	
Ellis County			
Phillips	1-Schneider	NWc 20-12-17 W	OWD
Greenwood County			
Mendenhall et al	3-Grossworth	CWL NW NW 9-25-13 E	
York State	1-Pedroja	SWc NE 15-23-11 E	
Ritchey-Moore	2-Prixlee	SW NE SE 7-22-10 E	
Sheedy et al	5-Sharp	NW SE NW 5-24-13 E	
Walton	2-Dalton	NW SW NW 5-24-13 E	
Lyon County			
Sheedy et al	1-Reese	SWc SE 16-20-10 E	
Sheedy et al	5-Hughes	NW SW SW 19-21-10 E	
McPherson County			
McCulloch	1-Sperling	SEc NE 29-21-3 W	
Helmerick-Payne et al.	1-Kaufman	NW NE NW 22-21-3 W	
Prairie-Slick	1-Stuckey	NWc SW 10-21-3 W	
Pawnee County			
Amerada	1-Welch	C SE SE 30-21-17 W	
Woodson County			
Harper	3-Reed	CEL SW NE 28-23-14 E	
TEXAS			
NORTH CENTRAL & EAST CENTRAL			
Brown County			**Survey**
Darby	5-Belvin	Sec-42	Chaddick
Metcalf et al	1-Jones		Crane
Bucher et al	1-Black	Sec-8 Blk-362	Brown Co. Sch. Ld.
Mitcham-Preston	1-Turner		Monteith
Smith	30-George	Sec-42	Chaddick
Smith	29-George	Sec-42	Chaddick
Smith	31-George	Sec-42	Chaddick
Crab-McNeil	7-Esberry	Blk-146	Williams
Humble	18-Kilgore	Sec-3 Blk-789	Delgado
Humble	19-Kilgore	Sec-3 Blk-789	Delgado
Callahan County			
Campbell	2-Jackson	Sec-20	ET
Westheimer-Daube	2-Hart	Sec-7	D&DA
Coleman County			
Brodrick-Calbert	2-Buck	Blk-269	Cochran
Diana	2-Morris	Sec-27 Blk-722	Webber
Mattox et al	1-Williams	Blk-279	Farris
Lloyd et al	2-Bartholmew	Blk-279	Farris
Eastland County			
Pitzer-West	1-Reagan		Murphy
Texas Dev	2-Westlanholm	Sec-44 Blk-4	H&TC
Mayes	1-Brashear	Sec-6 Blk-6	ET
NORTH TEXAS			
Archer County			
Hedrick Camp Drlg.	2-Wilson		Howard
Burns	1-Dubose	Blk-10	Meade
United Prod. & Consolidated	1-Mangold	Blk-17	Mangold
Pandem	2-Young	Sec-2426	TE&L
United Prod. et al.	1-Wilson	Sec-1	SP
Elliott-Pace	1-Wolfe		Howard
Duke et al	2-Richardson	Sec-2425	TE&L
Continental	B2-Falls Co. Sch. Ld.	Blk-15	FCSL
Wayne King	1-Portwood	Sec-2411	TE&L
Gilliland-Rosser	1-Walsh	Sec-2416	TE&L
Baylor County			
Consolidated	4-Portwood	Sec-1281	TE&L
Cooke County			
Kewanee	1-West		Cheneworth
Kewanee	1-Dennis		Hermandez
Republic Prod	1-Hickman		Knight
Montague County			
Continental	C2-Cunningham		Edmonson
Wichita County			
Hamer	1-Hamilton		Durain
Ascott	3-Jackson	League-4 Blk-25	Denton Co. Sch. Ld.
Sheldon et al	2-Robinson	Blk-310	Waggoner
Sheldon-Jamison	2-Valkhart	Blk-309	Waggoner
Wilbarger County			
Ven-Mex	H1-Waggoner	Sec-8 Blk-4	H&TC
Golding-Cochran	K4-Waggoner	Sec-4 Blk-17	H&TC
Dixie	A2-Waggoner	Sec-4 Blk-5	H&TC
Steademan-Thrasser	1-Bywaters	Sec-28 Blk-13	H&TC
Barkley-Meadows	C12-Waggoner	Sec-5 Blk-5	H&TC
Texas	E22-Waggoner	Sec-25 Blk-4	H&TC
Bradstreet	C6-Waggoner	Sec-31 Blk-4	H&TC
Fain-McGaha	L17-Waggoner	Sec-31 Blk-4	H&TC
Young County			
Fowler et al	B1-Hill Est.	Sec-195	TE&L
Sorrells-Jackson	1-Keithley	Sec-152	TE&L
Nix-Stump	1-Carpenter	Sec-164	TE&L
Wise-Porterfield	4-Cullers		Stinnett
Riggs	1-Keeter	Sec-150	TE&L
Perkins-Cullum	3-Deitrich		Stell
Sun	16-Kunkel	Sec-4	BBB&C
Sun	17-Kunkel	Sec-4	BBB&C
Petroleum Prod	1-Cary	Sec-410	TE&L
PANHANDLE			
Gray County			
Vulcan	1-Carpenter	Sec-25 Blk-25	H&GN
Follette	1-Hood	Sec-32 Blk-3	I&GN
Stover-Shell	1-Saunders	Sec-3	B&B
Danciger	2-Smith	Sec-149 Blk-3	I&GN
Jean Pet	1-Ferneaup	Sec-200 Blk-B-2	H&GN
Operators	3-Bowers	Sec-120 Blk-B-2	H&GN
Lefors Pet	4-Shaw	Blk-30	Shaw
Wheeler County			
Upham	7-Gootch	Sec-81 Blk-23	H&GN
Wishkamper et al.	2-Johnson	Sec-50 Blk-17	H&GN
Murchison-Fain	1-Cooper	Sec-80 Blk-32	H&GN
Dunaway Bros	1-Worley	Sec-39 Blk-24	H&GN
Holmes et al	2-Close	Sec-82 Blk-23	H&GN
WEST TEXAS			
Crane County			
Warner-Quinlan	7-Univ.	Sec-39 Blk-30	Univ.
Duffey	7-Cowden	Sec-18 Blk-Y	CCSD
Crockett County			
Magnolia	1-Hoover	Sec-12 Blk-1	GC&SF
Mitchell County			
Morrison et al	2-Morrison	Sec-31 Blk-28	T&P
Pecos County			
Landreth Prod.	7-Univ.	Sec-13 Blk-18	Univ.
Landreth Prod. World	B7-Univ.	Sec-13 Blk-18	Univ.
Texas	1-Graef	Sec-44½ Blk-12	H&GN
Black-Ditman	1-Pecos Valley	Sec-34 Blk-3	H&TC
Upton County			
Texas Pacific	1-Reese	Sec-2 Blk-3	MK&T
Ward County			
Atlantic-Delmar	6-Hazlett	Sec-17 Blk-5	H&TC
Atlantic-Delmar	7-Hazlett	Sec-17 Blk-5	H&TC

Completions in Texas, Week Ended December 14, 1929

NORTH CENTRAL & EAST CENTRAL

Brown County

Company	Well Farm	Survey	Sec. & Blk.	Depth	Init. Prod.
Buder-Trustee	6-Munselle	Arenbeck	Blk-3	1188-1191	2
Curry	1-Prater	Swain	Blk-145	1313-1328	25
Darby	4-Belvin	Chaddick	Sec-42	1318-1319	169
Gordon	A1-Cannon	Arenbeck	Blk-3	1293-1297	2
Gordon	A4-Cannon	Arenbeck	Blk-3	1200-1202	60
Humble	B4-Hickman	Kinsey		1289-1290	75
Humble	A10-Kilgore	Delgado	Sec-3 Blk-789	1123-1148	35
Humble	B17-Kilgore	Delgado	Sec-3 Blk-789	1149-1165	30
Humble	2-Martin	HT&B	Sec-11	967- 973	20
Lloyd	30-Collier	Smith	Blk-139	422- 431	8
Smith	21-George	Chaddick		1322-1344	150
Bruce	1-Boyson	ET	Sec-7	T.D. 1240	Dry
Cranfill-Reynolds et al.	2-McDonald	Carrier	Blk-60	T.D. 840	Dry

Callahan County

Brehill	1-Coffinger	Anderson		T.D. 307	Dry
Ducker	1-Seale	BBB&C	Sec-130	T.D. 780	Dry
Hart Bros.	4-Hart	D&DA	Sec-7	T.D. 526	Dry
Young Bros.-Alexander	20-Hickman	BBB&C	Sec-148	T.D. 750	Dry
Moutray	54-Hickman	BBB&C	Sec-149	T.D. 794	Dry
Campbell	1-Jackson	ET	Sec-20	970-1124	250
Moutray	6-Clores	BBB&C	Sec-149	714- 726	20
Heist-Hart	2-Hart	D&DA	Sec-7	514- 522	25

Coleman County

Diana	1-Morris	Webber	Sec-27 Blk-722	2020-2049	200
Lloyd et al	1-Bartholemen	Farris	Blk-279	1443-1444	150

Eastland County

Keough	1-Balderrel	H&TC	Sec-62 Blk-4	3439-3471	148
Lone Star	1-August	SP	Sec-475	3516-3531	3
Transcontinental et al	1-Holland	SP	Blk-1	3810-4035	14/125M 1-7/25 M
Whitesides Bros.	2-Murrell	H&TC	Sec-29 Blk-2	1330-1337	10
Hopkins	2-Davis	H&TC	Sec-54 Blk-4	T.D. 3703	Dry
Meyers	1-Byrd	H&TC	Sec-30 Blk-2	T.D. 1365	Dry

NORTH TEXAS

Archer County

Douglas	4-McClure	Crawford	Blk-13	1293-1299	28
Duke	1-Young	TE&L	Sec-2426	1413-1415	160
Haynes et al	1-Hannis	Clark	Sec-61 Blk-3	T.D. 1350	Dry
Hutchinson	2-Hutchinson	Harris	Sec-142	T.D. 1427	Dry
Perkins-Cullum-Parson	1-Williams	Swing		T.D. 625	Dry
United Prod.	1-Lyles	SP	Sec-2	T.D. 1731	Dry

Clay County

Saxet	1-Stine Est.	Parker Co. Sch. Ld.	Blk-2	T.D. 1016	Dry

Cooke County

Kewanee	2-Franklin	Rodriguez		T.D. 1600	Dry
Humble	6-Poteet	Stephens		1640-1665	25
Kewanee	B8-Hyman	ET		1391-1515	70

Wichita County

Hobbs	1-Munger	KWVFL	Blk-31	1758-1773	125
Stumpf	2-Waggoner	GH&H	Sec-8 Blk-8	T.D. 2001	Dry

Wilbarger County

Consolidated-Martin	1-Dill	H&TC	Sec-82 Blk 14	T.D. 2350	Dry
Massie	1-Waggoner	H&TC	Sec-17 Blk-14	T.D. 1952	Dry
Texas	367-Waggoner	H&TC	Sec-16 Blk-13	T.D. 1132	Dry
Davis	3-Waggoner	H&TC	Sec-35 Blk-2	2639-2670	400
Fain-McGaha	L15-Waggoner	H&TC	Sec-31 Blk-4	2294-2296	125
Fain-McGaha	W20-Waggoner	H&TC	Sec-32 Blk-4	2300-2303	329
Fain-McGaha	W21-Waggoner	H&TC	Sec-32 Blk-4	2311-2316	84
Golding-Cochran	K3-Waggoner	H&TC	Sec-4 Blk-17	1920-1925	125
Shaw	E7-Waggoner	H&TC	Sec-18 Blk-4	2406-2428	60

Young County

Wise-Porterfield	3-Cullers	Stinnett		553- 578	35
Riggs-Williams	1-Van Meter	TE&L	Sec-177	T.D. 1065	Dry
Wooten-Reed	2-Casey	Casey		T.D. 616	Dry

PANHANDLE

Carson County

Reynolds et al	2-Cooper	I&GN	Sec-5 Blk-9	3085-3125	300
Ryan Condolidated	6-Black	I&GN	Sec-111 Blk-4	3080-3100	225

Gray County

Texas	3-McLarty	ACH&B	Sec-10 Blk-1	T.D 2420	5½M
Danciger	7-Beck	H&GN	Sec-28 Blk-B-2	2770-2780	1050
Humble	1-Chapman	H&GN	Sec-69 Blk-25	2808-2890	7M
Operators	8-Cook	H&GN	Sec-30 Blk-B-2	2810-2814	2984
Phillips	1-Cox et al	H&GN	Sec-58 Blk-B-2	2991-3260	7
Shamrock	2-McCutcheon	Eustice	Sec-1	2600-2798	10
Skelly	1-Chapman	H&GN	Sec-69 Blk-25	2798-2806	600
Texas	3-Chapman	H&GN	Sec-69 Blk-25	2655-2700	558
Guernsey	1-Pope	I&GN	Sec-173 Blk-3	3090-3260	50
Hinerman et al	1-Taylor	Wallace	Sec-8 Blk-H	T.D. 3325	Dry

Hutchinson County

Continental	1-Johnson	B&B	Sec-6 Blk-1	3175-3178	287
Phillips	6-Johnson	Whittley		2920-2926	45
Travelers	2-Cockrell	D&SE	Sec-8 Blk-B-3	3010-3039	30
Rock Creek	4-Johnson	A&B	Sec-28 Blk-Y	2930-2940	10

WEST TEXAS

Crane County

Simms-Atlantic	2-Univ.	Univ	Sec-45 Blk-30	2820-2994	200

Howard County

Pure	2-Hooks	W&NW	Sec-140 Blk-29	1854-1855	50
Moody	18-Roberts	W&NW	Sec-137 Blk-29	1895-1897	20
Merrick-Lamb	10-Clay	W&NW	Sec-126 Blk-29	1868-1923	55
Continental	7-Settles	W&NW	Sec-135 Blk-29	2948-2959	70 (1-Hr.)
Continental	5-Kloh	T&P	Sec-13 Blk-33	2115-2157	40(1Hr)
California	8-Roberts Lse-2	W&NW	Sec-137 Blk-29	2956-2990	200
Shell	1-Kloh et al	T&P	Sec-13 Blk-33	2170-2335	850

Pecos County

California	3-Smith Lse-5	TC	Sec-16 Blk-194	1815-1832	25
Landreth Prod.-World	B5-Univ.	Univ.	Sec-13 Blk-18	1608-1656	925
Landreth Prod.	C1-Univ.	Univ.	Sec-31 Blk-16	945-1040	33
Landreth Prod.	D2-Univ.	Univ.	Sec-31 Blk-16	970- 985	60
Shell	C2-Univ.	Univ.	Sec-31 Blk-16	1639-1657	165
Shell	C3-Univ.	Univ.	Sec-31 Blk-16	P.B. 1656 1592-1645	765
Taylor-Link	5-Univ.	Univ.	Sec-31 Blk-16	1585-1644	270
World	1-Univ.	Univ.	Sec-31 Blk-16	1630-1665	55
Cosby Prod. & Royalty	1-Kansas City & Ft. Stockton Land Co.		Sec-31 Blk-178	T.D. 2285	Dry
Grant et al	1-Toney	T&STL	Sec-19 Blk-140	T.D. 4590	Dry
Tower-McKanna	1-Univ.	Univ.	Sec-14 Blk-16	T.D. 2096	Dry

Completions in North Louisiana and Arkansas, Week Ended December 12, 1929

Louisiana—Caddo Parrish—Dixie

Company	Well	Location	Depth	Yield
Planters Oil & Gas Co.	Pittman No. 2	23-19-14	2583	salt water abnd.
Lide et al	Levee Board No. 1	24-19-15	2500	dry abnd.
Standard Oil Co. of La.	School Board No. 4	16-19-14	2439	50 bbls.

Ouachita Parish—Monroe

Austin & Jordan	Albright No. 1	13-18-3E	2229	1½ M ft. gas
Sho-Van Gas Prod. Co.	West Va. No. 2	8-18-5E	2219	2¼M ft. gas

Red River Parish

Eylers O & G Co.	Chaffraix No. 4	30-12-10	2750	salt water abnd.

Richland Parish

Industrial Gas Co.	Hemlar A-1	12-16-6E	2450	40M ft. gas
Industrial Gas Co.	Rayville Bank No. 1	12-16-6 E	2450	40M ft. gas
Northern La. Nat. Gas. Co.	Pipe No. 1	34-17-6E	2450	1M ft. gas
Northern La. Nat. Gas Co.	Purvis No.	34-17-6E	2451	4M ft. gas

Sabine Parish—Zwolle

R. L. Gay, Trustee	Bowman-Hicks No. 5	14-7-14	2586	75 bbls.
R. L. Gay, Trustee	Bowman-Hicks A-1	34-8-12	2413	6,000 bbls.

Union Parish—Monroe

Greenwood Prod. Co.	Holloway No. 1	1-21-3E	2162	2M ft. gas
Interstate Nat. Gas Co.	Fee No. 23	33-20-3E	2276	3½M ft. gas

East Texas—Panola County

Nemours Corp.	Tiller No. 6	W. D. Matthews HRS	2320	1M ft. gas

Arkansas—Ouachita County-Smackover

Skelly Oil Co.	Woods No. 5	34-15-15	2027	salt water abnd.

Standards Perfected in Committee Sessions

CHICAGO, Dec. 12.—Tentative standards on long thread, Grade D casing have been adopted by the standardization division of the American Petroleum Institute, clarifying a field situation that had seriously hampered California oil operators prior to this year's meeting of the Institute.

With the exception of Grade D, furnished by manufacturers in both long and short thread joints, other California casing specifications had been according to A.P.I. standards.

Though unofficial for the present, dimensional standards will show in the standardization division handbook. No master gauges will be required for at least a year.

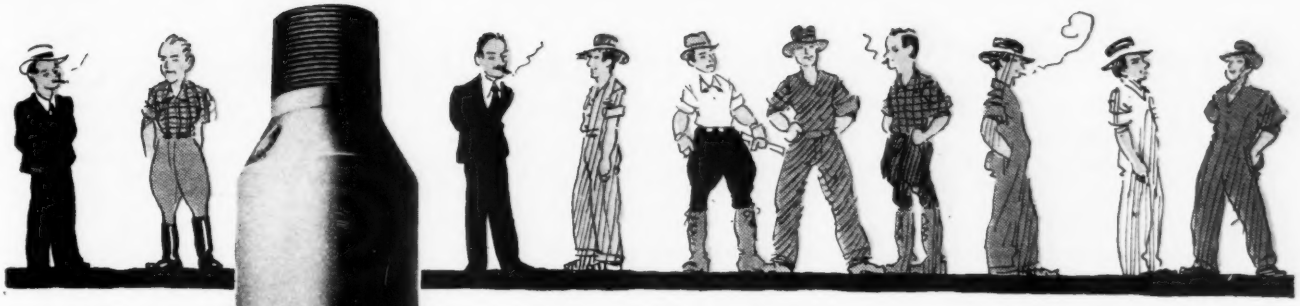
A manufacturers sub-committee of the derrick group decided after exhaustive study to recommend a field poster relating to derricks.

The national committee will insert in its next specifications tentative stipulations covering wooden derricks. At the request of California operators it is proposed to add a 136-foot derrick on 26-foot base to specifications of the national committee.

The boiler group added the 100 horsepower type boiler to its specifications and a 125 horsepower type will be added also upon formal approval.

Safety for Oil Pumper In Film

CHICAGO, Dec. 13.—How to safely light and operate boilers, run steam engines, crank gas engines, "hook wells off and on," gauge tanks and wear gas masks, are some of the things told in a film strip on "Safety for the Oil Field Pumper," prepared by the petroleum section of the National Saftey Council, Chicago. It is especially suitable for the instruction of oil field workers.



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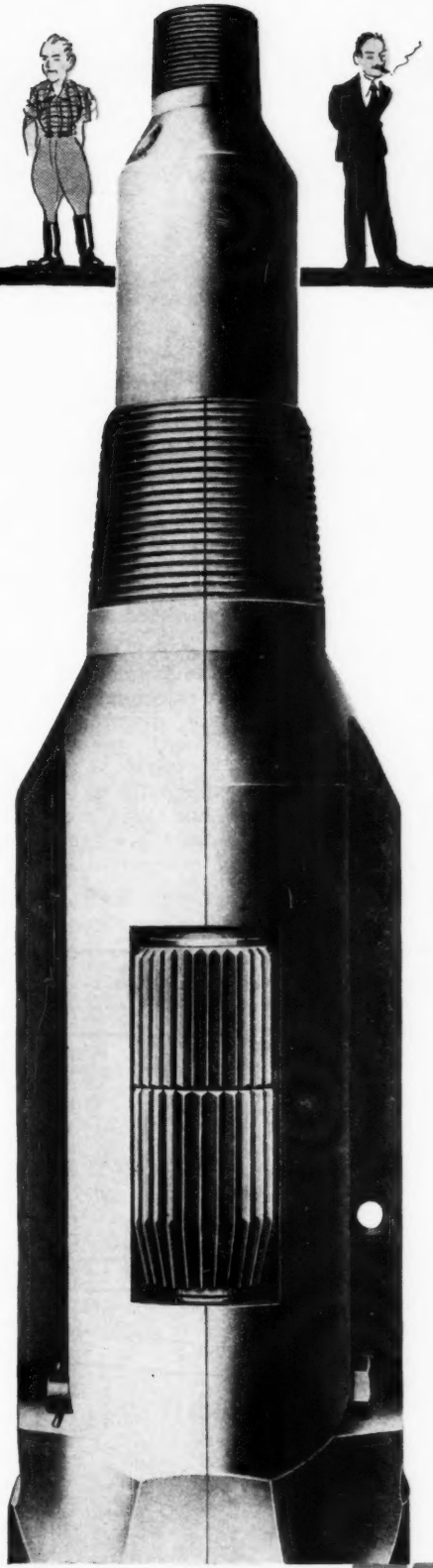
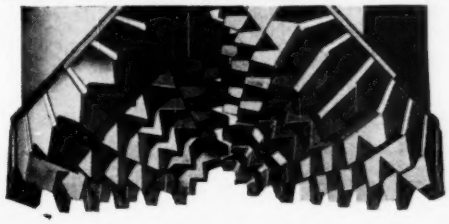


HUGHES TOOL COMPANY



Service Plants:
Los Angeles
Oklahoma City

Main Office and Plant:
HOUSTON
TEXAS

Export Office:
Woolworth Bldg.
New York City

Fault in Structure at Oklahoma City Provides Channel for Water

By William F. Lowe
N. P. N. STAFF WRITER

TULSA, Dec. 14

WHERE is the water of the Oklahoma City pool coming from and why is it thus far confined to the Arbuckle? Is the hydrostatic head within the Arbuckle itself, or is this great dolomitic lime body just the medium through which the water of another bed passes? Will the detrital zone eventually have this water and if so, when?

These are the questions that are occupying the minds of operators and geologists alike as the water in the "City" pool shows in additional wells. On the correct answers depends the future of this prolific area.

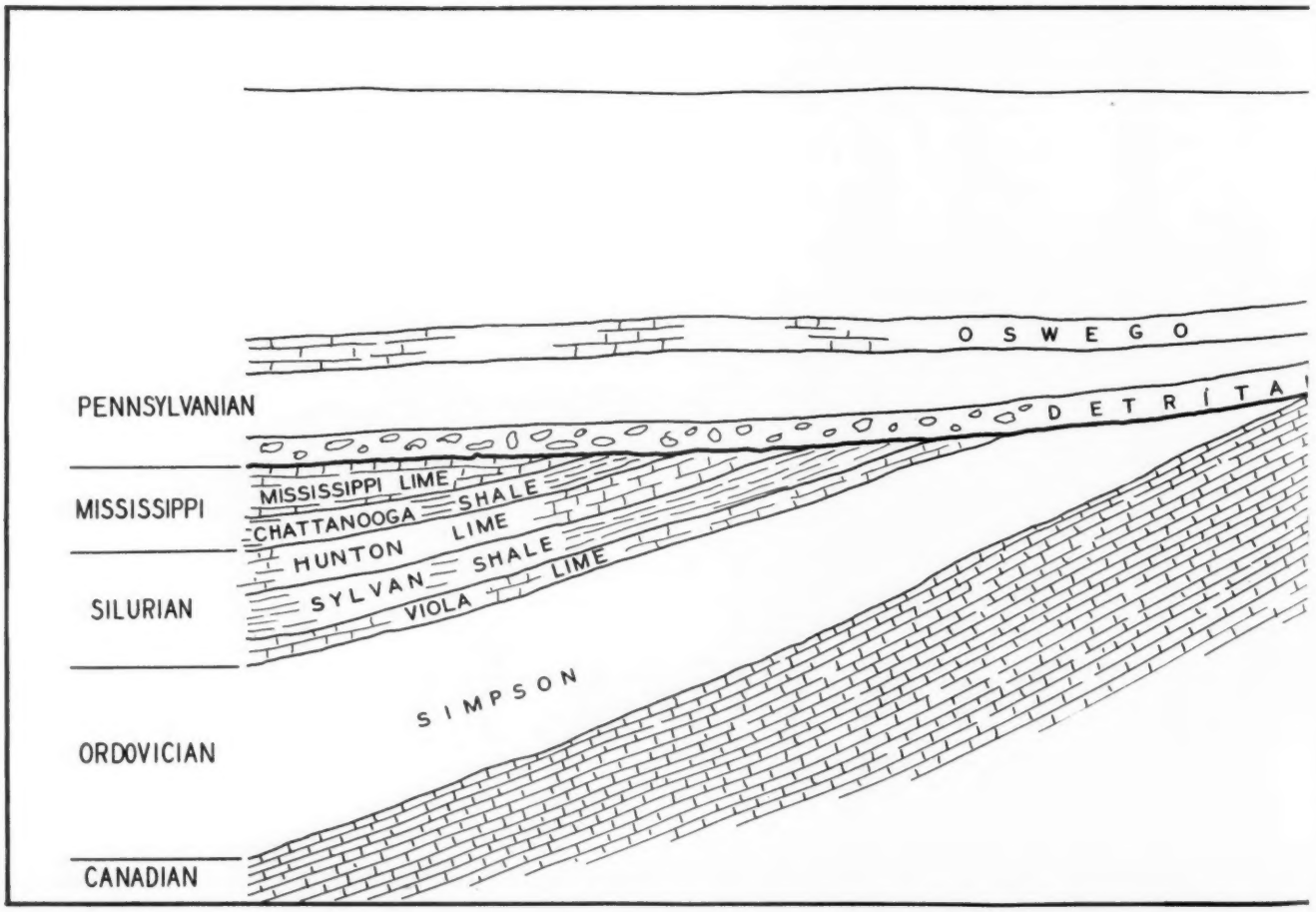
At this time there are 18 wells making water in amounts varying from a trace to 65 per cent of the total fluid taken from the hole. All of these are producing from the Arbuckle. The other 12 wells bottomed in the same horizon are not yet reported as making any water but there seems a good chance of their starting before the 10 producers of the detrital zone do.

The above statement is contingent upon several factors, the most important of which is the amount of back pressure maintained on the latter wells. If anything approaching the wasteful methods of other fields is practiced at Oklahoma City, there is reason to believe that the detrital zone will, in the not distant future, be affected by water incursion. That is, provided that the present theories of the origin of this water are correct. They are logical if nothing else.

Recent completions have led to several changes of opinion regarding the subsurface structure of this pool. Published cross-sections east and west across the area, including the one which appeared in these columns early in August, presupposed an even and unbroken structure. With the information available at that time this was a natural conclusion. Now however, geologists are not so willing to concede the regularity that was then expected.

Because of these changes, the idea that the water which first appeared was of the connate or trapped variety has been discarded. This idea originated with the fluctuation of the flow of water in the discovery well several months ago. Since that time there has come sufficient evidence of hydrostatic head to warrant a search for a new solution.

An explanation for the presence



Cross-section of the Oklahoma City pool

of connate water in the Arbuckle, is found in the shifting of the water table as a result of earth movements. These movements have taken place from time to time throughout the history of the region and they are still going on at the present time. Every such occurrence causes a raising or lowering of the saturated horizon.

A regional upthrust of the earth results in a downward shift of the water table. The change being slow, certain of these waters were left behind, trapped in the upper strata. Some such movements undoubtedly took place at Oklahoma City, but as stated above, if this were the only source of water in that pool, it would long since have been exhausted.

Whether or not water was entrapped in the Arbuckle by these changes in sea level is immaterial. Their importance lies in the fact that they were responsible in no small measure for the leaching out of the limestones within that formation. The porous zones resulting from this action later became the reservoirs for the storage of oil.

Previous to the finding of a fault indicating section in the Prairie-Slick No. 2 Hiddleston, SE SE SE 19-11-2W, it was thought that the water head was backed up in the Arbuckle itself. The geologic information furnished by this well however, introduced what seems a more logical conclusion, that the water of the Simpson is using this fault as a passage to the Arbuckle lime.

The Simpson is made up of limestones, shales and sands and is recognized as the best aquifer, or water bearing formation, in the state of Oklahoma. Its porous beds are, in comparison to those of the more firmly cemented Arbuckle, uniform over wide areas. For this reason it is more likely to carry water in quantity from the distant mountain outcrop sources than is the less porous and less uniform Arbuckle formation below it.

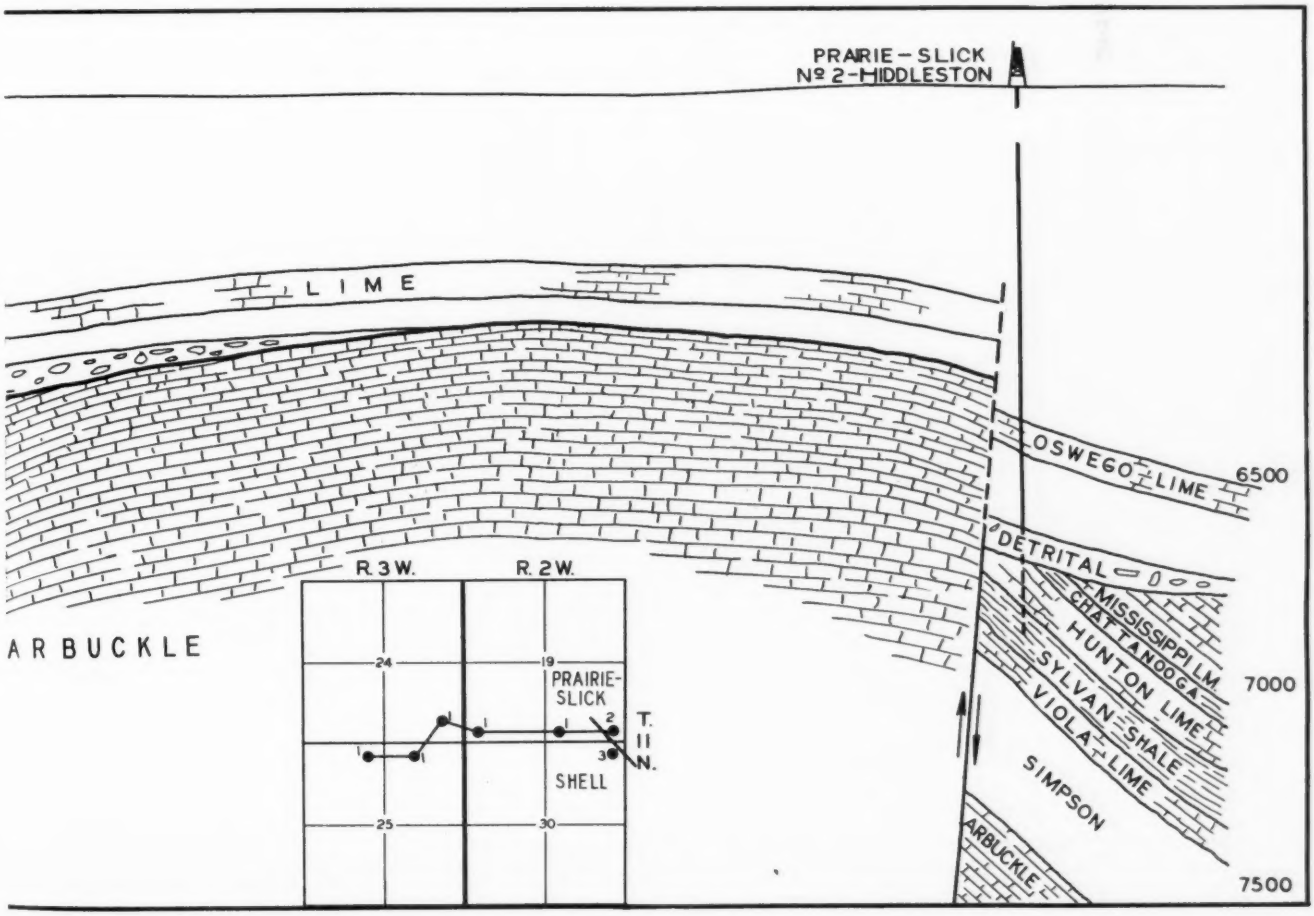
The above statement does not carry with it the implication that the Arbuckle has no water bearing horizons of its own. It has several. However it is doubtful if they are persistent from the catchment areas in the Arbuckle or Ozark mountains and elsewhere, to the structure at Oklahoma City. They might very possibly be joined by small fractures in such a way as to offer a passage for water for the whole distance. But even so, there is a question whether the present hydrostatic head would exist under those conditions.

The presence of a fault of major proportions makes the above suggestion as to the source of the water in the pool fairly reasonable. As shown in the accompanying cross-section, it places the Simpson well down the side of the Arbuckle with easy access to the porous, leached out zones of that formation.

Belief in the existence of this fault is not yet as general as might be expected. The evidence to prove it however, seems conclusive. The Prairie-Slick No. 2 Hiddleston, shown at the extreme right of the cross-section, and its south offset, the Shell No. 3 Petty, early began logging low on the upper beds. The result was that a rather sharp east dip of the structure was inferred, the condition being typical of similar fields in the state.

A striking difference in these two wells was first noticed when the Hiddleston No. 2 topped the Oswego at 6270, 122 feet lower than the Shell offset to the south. At 6219 the latter well reached the Arbuckle after passing through a trace of detritus. The Prairie-Slick well however, did not find the detrital zone until a depth of 6660 feet was reached and at 6703 entered the Hunton instead of the Arbuckle. The well is bottomed at 6857 in a shale that might very possibly be the Sylvan.

So wide a discrepancy in geologic section between two offsetting wells can only be explained in one way. A fault with a throw of from 700 to 1200 feet lies between them. The exact amount of displacement is as yet undetermined for the thickness



showing fault on east side of structure

of the Simpson at this point is not definitely known.

For purposes of illustration this formation is estimated at 500 feet in the drawing, though it may have twice that thickness. Being near the top of a high in the old erosional surface of the Arbuckle, a thinning of this bed may be expected. Support for this theory is found in the No. 9 Barkus of the Gypsy Oil Co., in the Mission pool, 5-8-6W of the Seminole district. Where 1500 feet of Simpson outcrops in the mountains to the east, but 800 feet was found in the Gypsy well near the top of the fold. Known regional thinning toward the north and west probably accounts for a portion of this loss in thickness.

Between the No. 2 Hiddleston and the No. 1, four locations west, the same changes in section are present. The distance which separates them, 1980 feet at the surface, might be sufficient for sharp folding to account for the wide differences in their logs. It is a possibility, but is hard to imagine a fold of that magnitude without considerable fracturing of the hard Arbuckle lime.

Faulting as indicated above is not only a more logical explanation but, considering the section of the Shell No. 3 Petty, it is the natural conclusion. Certainly it is the only one of the two earth movements that could have left the west side of the structure undisturbed, as it at present seems to be.

Though the indicated fault is large, it is thought to be confined to the lower zone. There is some question as to whether it affected even the Oswego in the overlying Pennsylvanian beds. At Garber, where faulting on a similar scale took place, these upper beds were fractured either at the same time or in later movements as they settled over the broken formations below. In any event the passages thus opened between beds served as channels through which the oil from the Ordovician migrated to the horizons above. The result was that the best production in that field was found in the Pennsylvanian.

There is no impervious layer between the detrital zone and the eroded edge of the Simpson on the west side of the structure. It has then, the enormous hydrostatic head of the latter formation behind its oil and gas production. It is possible that no little contribution to this head of water could come from the Simpson through the Arbuckle as a result of the fault. If the wells now producing from the Arbuckle are not carefully cemented, detrital zone wells in the heart of the field may begin making water before the edge wells do.

As to the extent of the fault north and south, or northwest-southeast, as it seems to trend at present, there is little to be said beyond conjecture. Its effect on the water supply is the most interesting thing about it at the time being.

Note: For map showing present developed area of Oklahoma City field see NATIONAL PETROLEUM NEWS, *Dec. 4, page* 81.

Where the coast highway of California cuts the Rincon oil field. The highway runs at the foot of the cliff close to the water's edge at many points. The Rincon field is right along the shore

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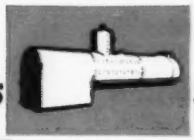
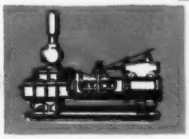
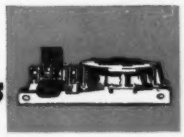
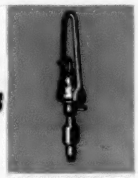
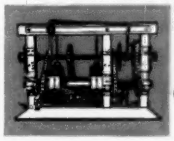
Merco Nordstrom Valve Co., 343 Sansome St., San Francisco, has promoted these men effective Jan. 1: Comfort E. Brown, eastern divisional manager, to become vice president in charge of sales, with headquarters at New York City; C. C. Evernham, western divisional manager, to become purchasing agent at San Francisco; and E. D. Rogers, southern manager, to become general sales manager, San Francisco.

Stockham Pipe & Fittings Co., Birmingham, Ala., manufacturer of a complete line of cast iron, malleable iron and electric cast steel pipe fittings, has published a vest pocket size catalog for buyers, specifiers and users of pipe fittings.

It has 359 pages of information on its 7500 different fitting patterns, and contains dimension data, making it possible for anyone to quickly estimate the fittings for any job. It is known as catalog H.

The company maintains stocks at Boston, New York, Chicago, Houston and Los Angeles, in addition to its factory at Birmingham.

"OILWELL" LEADS THE FIELD IN VENEZUELA

THE Amount of "OILWELL" Equipment used in the oil fields of Venezuela is greater than the combined total of all others. For example... more than 50% of the Boilers  **are "OILWELL"... more than 60% of the Pumps**  **are "OILWELL"... more than 50% of the Rotaries**  **are "OILWELL"... more than 50% of the Swivels**  **are "OILWELL"... more than 60% of the Hoists**  **are "OILWELL"... THIS Leadership is the result of a thorough knowledge of oil field requirements... backed by the facilities to produce equipment that provides greater efficiency under all working conditions. THIS Leadership indicates the confidence oil men have in "OILWELL"**

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

Capping A Wild 'Un

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES

DRILLERS and operators in the Kettleman Hills field are firmly convinced that Nature has absolutely no regard for the carefully formulated plans of man.

They arrived at this conclusion when Continental Oil Co.'s Elliott 12-8 went on a rampage after being brought in under full control. After the drill penetrated the oil sand, every possible precaution was taken to prevent a blowout, because previous difficulties encountered by Milham Exploration Co., in the discovery well, had given an indication of what might be expected.

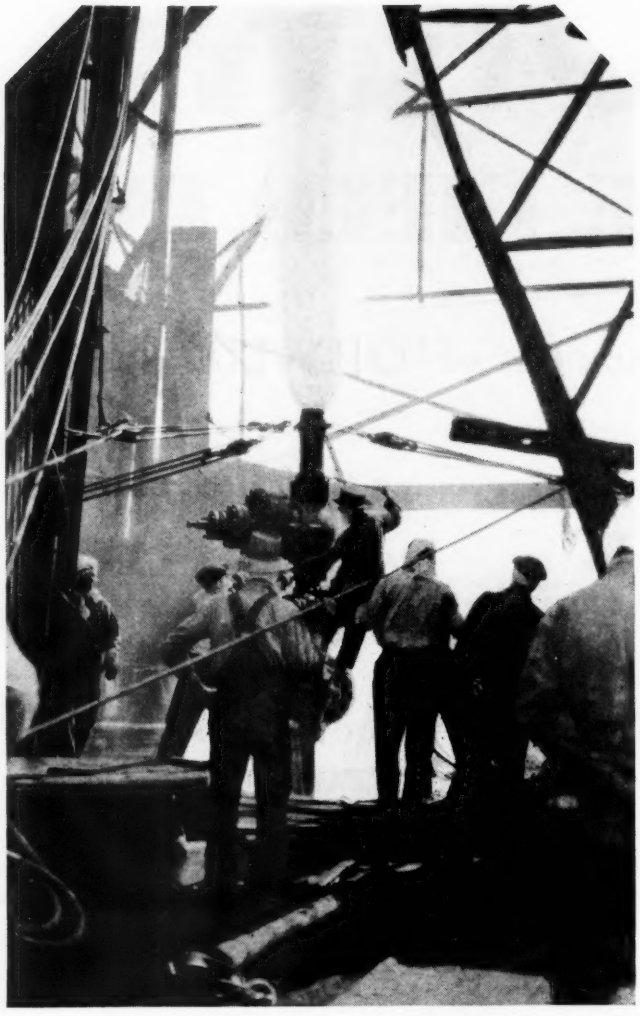
The well was brought in under full control with 8⅝-inch, 44.8-pound special high tensile seamless casing, and 3-inch upset tubing. The flanges, Xmas tree, and other fittings were 5000-pound test equipment.

After seven hours production, the well while making about 50 million cubic feet of gas built up a bean pressure of 650 pounds, and a casing pressure of 2150 pounds. The connections in the cellar gave way and started to blow, after which the casing pressure was once observed at 2350 pounds and had undoubtedly been considerably higher at the moment of eruption.

The exact cause of the failure is unknown, but probably either the gaskets or bolts in the landing flange failed. Later examination of the Xmas tree showed the cross to be blocked with shale, which possibly accounted for the sudden increase in pressure and the subsequent failure of the equipment.

Here, indeed, was a predicament. The well was blowing in the cellar, spreading gas and contained oil all around the derrick floor, casing, rig, and surrounding country, so that it was impossible to work on the derrick floor without masks.

As the eruption had taken place below the Xmas tree and there was no means of securing an immediate shut-off from the surface, engineers decided to attack the problem by a method similar to that used in controlling burning wells; that is, via the underground tunnel. With this in view, a tunnel was started in the side of the hill about 200 feet from the well site, to strike the casing approximately 50 feet below the derrick floor.



Member of crew on Elliott 12-8 in Kettleman Hills tightening up nipple that started to back out while capping device was being screwed onto connection in cellar

Work was also started above ground, in an effort to cap the well in a more efficient manner. It was decided to remove the Xmas tree and, thereby, allow the gas to escape, unhampered, into the air. Before this could be accomplished, it was necessary to remove four 4-inch lead lines, made of drill pipe, that had been bolted through the derrick floor with clamps. Because of the inaccessibility of these clamps, the four lines were sawed off as near to the tree as possible.

In order to cut the pipes, a hack saw was designed with a very heavy blade and equipped with a clamp, hanging below the blade. When all was ready, the blade was snapped over the arms of the Xmas tree and the ¾-inch pipe extension from the hack saw was connected up with ropes and counter weights, so that the crew could operate the hack saw at a distance of from 50 to 100 feet.

After all four pipes were cut, the Xmas tree was dragged out by mule teams, bringing the tubing head and connections from the cellar. This allowed the gas to blow straight up and, due to the suction of air by the blowing gas, enabled the crew to work close to the well.

The force of the gas blowing into the air completely demolished the derrick within three days, so that it was in danger of falling. To facilitate operations and to remove the danger of fire that might be caused by falling metal striking objects on the ground, the wreckage was pulled down by one of the ⅝-inch guy wires.

With the Xmas tree and connections out of the way, the crew could enter the cellar. They found that the flange up, which had been screwed on the connection at the top of the casing, had been so badly cut by the rushing gas that it was useless. This flange was, therefore, backed off and allowed to blow out of the cellar, leaving a 10¾-inch male thread.

A capping device, designed by Chester Rasmussen, of Regan Forge

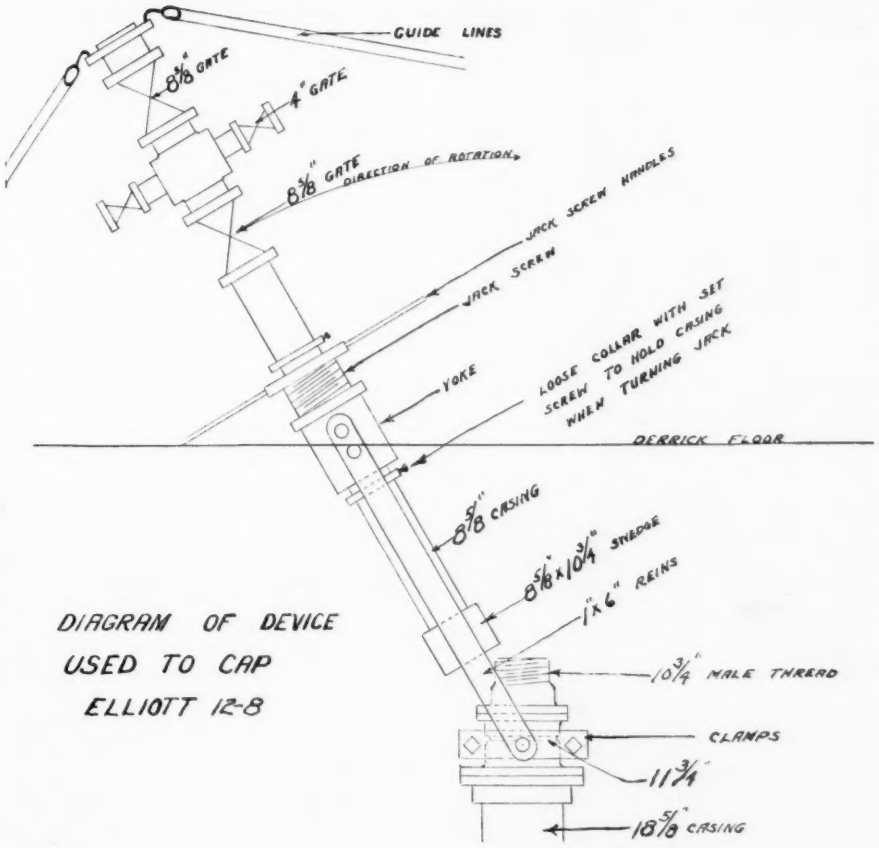


DIAGRAM OF DEVICE USED TO CAP ELLIOTT 12-8

In addition to these connections, 4-inch gates were placed on each side of the cross. The smaller gates were kept closed and the larger one was opened.

A special slip ring on a nipple was next screwed in to the top gate, so that guy wires could be fastened and still not interfere with tuning the nipple when making up the connections in the cellar. Guy lines with block and tackle were rigged up in four directions and preparations were made to swing the device over the flow of gas.

When all was in readiness, one of the guy lines was taken to an outside snatch block and connected to the rotary drum with a sand line. With men posted on the other three guide lines, the device was pulled over the flow with the draw works.

The 1 by 6 reins guided the hook-up over the flow in an arc, with the center of rotation at the clamp in the cellar, so that the pipe held between the reins was automatically centered over the flow in a very few minutes of actual operation.

Two 3-inch nipples, about 6 feet long, were then slipped over the handles of the jack screw, so that the crew could turn the screw and, thereby, force the 8⅝-inch nipple

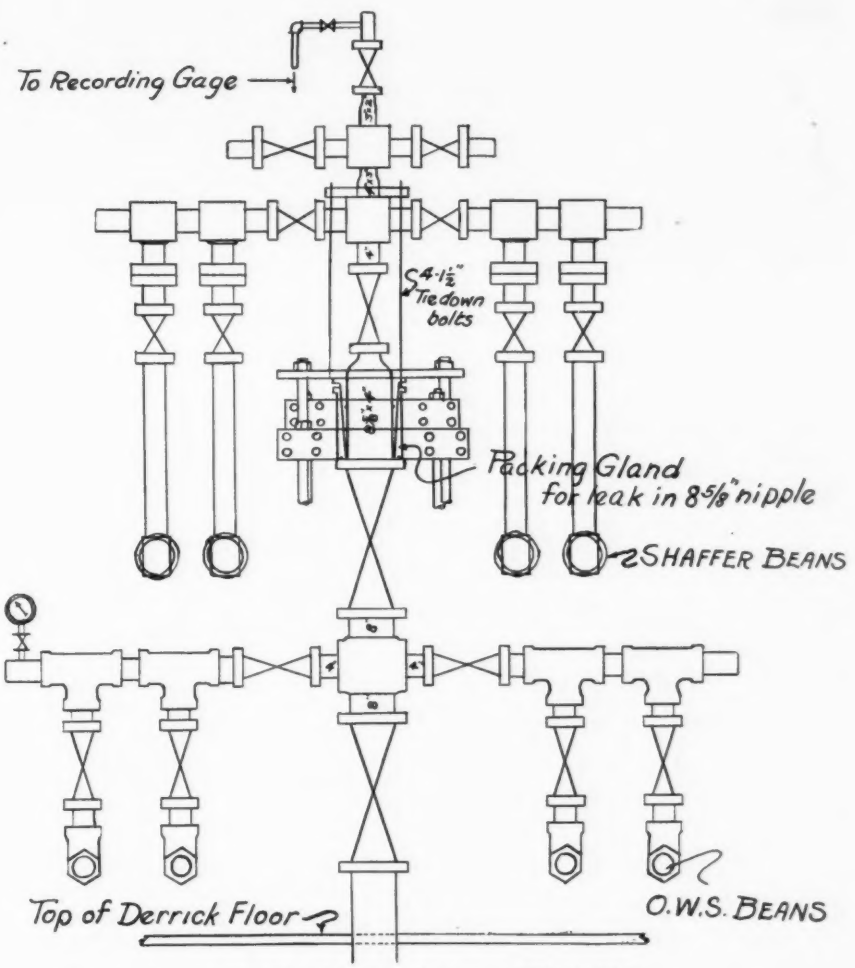
and Engineering Co., was used for the remainder of the work of bringing the well under control. As shown in the accompanying diagram, a heavy clamp was bolted on under the 11¾-inch landing flange; this clamp having two pins sticking out at right angles to the pipe and opposite each other.

A pair of reins, made of 1 x 6-inch steel and about 8 feet long, were then clamped at one end (the upper end) to a jack screw yoke. With this upper end standing back from the axis of the hole about 45 degrees, so that no part of the apparatus came into contact with the flow of gas, the lower ends, which had holes bored into them, were slipped over the pins on the clamp in the cellar.

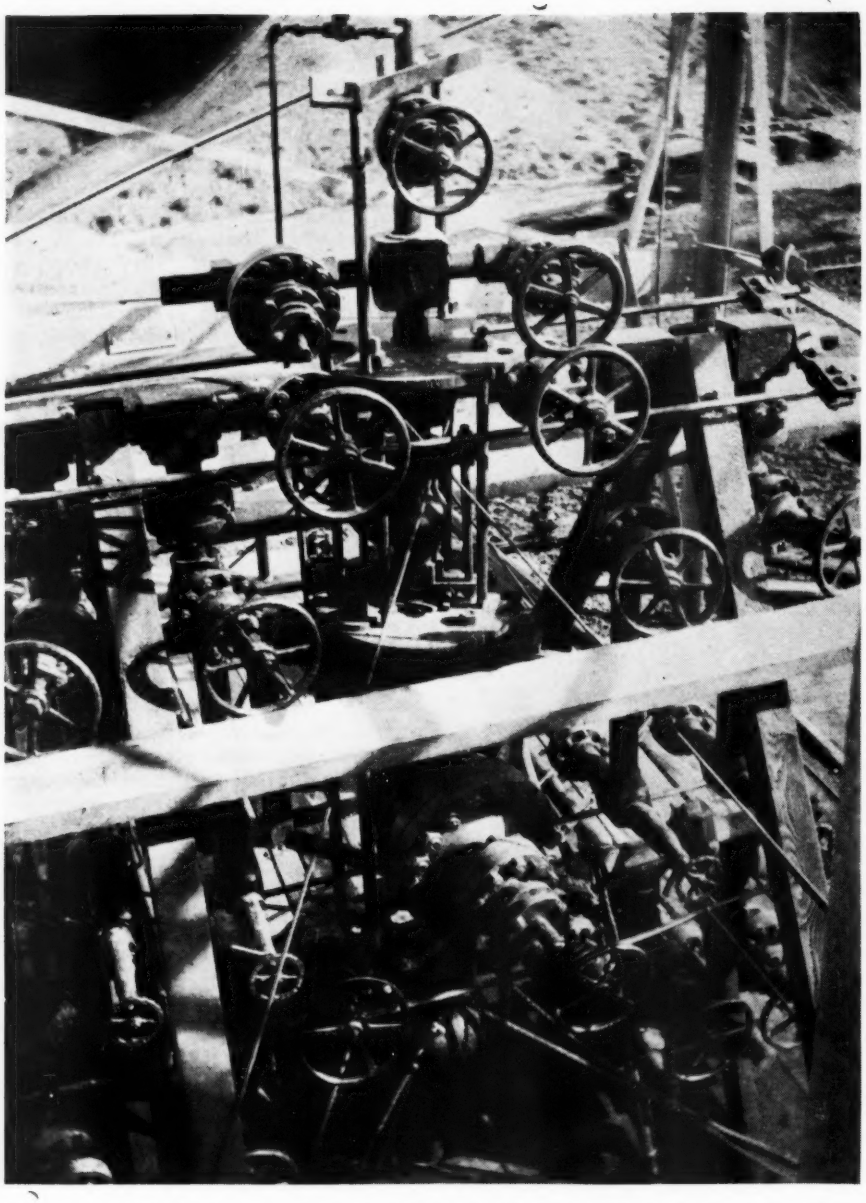
While placing these reins on the clamps, one of the crew suffered the only accident of the entire job. A 6 x 6-inch timber was wrenched out of his arms by the force of the gas and fractured his arm.

With the reins in place, an 8⅝-inch nipple, with a heavy swedge nipple on the bottom to screw on to the 10¾-inch end sticking up in the cellar, was then slipped through the yoke between the guide reins. Collars, with set screws, were placed on the pipe above and below the yoke so that the nipple could be fed down against pressure by turning the jack screw in the yoke.

On top of the nipple, a 5000-pound test 8⅝-inch drilling gate was placed with a cross above it and another 8⅝-inch gate above the cross.



Sketch of Xmas tree on Elliott 12-8



View of finished Xmas tree on Continental Oil Co.'s Elliott 12-8, *taken from calf wheel*

down until the threads in the swedge nipple centered over the 10¾-inch thread in the cellar. As soon as the threads had engaged, the feeding device was loosened and the pipe turned by hand without further difficulty.

Aided by the fact that the flow of gas and oil was blowing out of the upper 8⅝-inch gate, the crew was able to clean out the cellar and fill it up with cement. This precaution was taken as it was found that the connection sticking up in the cellar had been cut out considerably by the force of the escaping gas.

Twelve hundred sacks of cement were pumped in by an oil well cementing outfit and, due to the great mass, the heat generated by hydration caused several large cracks to form. These were cleaned out and grouted, however, so that the finished block was perfectly sound.

After the Xmas tree (which consisted of four 4-inch lines with 1½-inch beans) had been installed, the side gates were opened and an attempt was made to close the top 8⅝-inch gate valve. The pressure in the Xmas tree at this time amounted to 1100 pounds and the thrust against one side of the wedge, together with the removal of all lubrication by the flowing wet gas, made it impossible to close the gate.

The wheel twisted off and the work of shutting the gate continued with wrenches on the stem. The gate finally was closed to where it allowed the gas to blow into the air at the rate of only ten million cubic feet daily.

The following day, a swedge nipple was stabbed into the top of the 8⅝-inch gate with a 4-inch gate on the top. When this small gate was closed, the master gate was easily closed because the pressure was balanced.

In stabbing the 8⅝-inch swedge nipple over the flow, it crossed and galled so that the nipple could not be screwed up tight or removed. This was overcome by making a sleeve with a packing ring on the bottom to pack off against the face of the valve and a stuffing box gland in the inside of the sleeve at the top, packed off against the face of the nipple.

A 4-inch cross with four more flow lines was put on the 4-inch gate, above the master gate and bolts from above the cross were then tied through to the clamping place on top of the stuffing box in the sleeve. This plate was, in turn, tied down with four 2-inch rods, passed through the concrete to the clamps in the cellar.

The well got out of control on August 29 and the capping device was swung up over the flow on September 15, and the gas was finally turned into the traps on September 21. When the entire job was finished there was not a leak in the cellar or Xmas tree, and a pressure of 1240 pounds was being safely carried.

Production, amounting to 6800 barrels of 61 degrees gravity, water-white oil and 150 million cubic feet of gas, is handled through eight traps of 560-pound pressure, four traps of 45-pound pressure, and one trap at atmospheric pressure.

Some idea of the force of the gas may be obtained from the fact that two strong men were unable to hold a ¼-inch pipe in the flow of gas, in an attempt to get a gauge of the well after it had been sapped and was flowing open through the 8⅝-inch nipple, with a pressure of 1100 pounds showing on the derrick floor.

Nothing has been said about the extreme difficulty under which the crew worked, nor of the courage and skill with which the work was accomplished, but it is obvious that both existed and that valuable data were obtained that may help to control wild gassers of the future.

New Refinery at San Juan, Porto Rico

CLEVELAND, Dec. 16.—Advices have been received from Mr. J. A. Garcia, treasurer of the Imperial Oil Co. of Porto Rico, San Juan, that that company is planning to erect a small refinery at San Juan.

The plant will be about 50 barrels per day capacity, and the entire output will be used to meet the local demand for motor fuel, lubricants, and other refined petroleum products. It has not yet been announced definitely the crude on which this plant will operate, but it is expected that Venezuelan oil will be imported.

Modern Refining ~ Science and Practice

By Colonel George A. Burrell*

Article 3

Early Fractionating Columns; Methods of Column Control; Work of Recent Investigators

SHARP fractionation (commonly called rectification) of petroleum, natural gas, and natural gasoline, has its roots in the earliest development of rectifying towers, for the same principles are involved in sharply fractionating (rectifying) these substances as in fractionating any other materials. Thus we go back to some of the towers of the 15th and later centuries that Gustav Egloff presented in a recent article. Of all the early designs, the Coffey still, used by Aeneas Coffey, in 1831, probably represents the closest approach to sharp separation in columns of today. It was used to make liquor of higher alcohol content than could be accomplished by fermentation alone. It had sieve plates for holding a liquid level and for bubbling vapors through the liquid, and overflow pipes on each plate where the liquid fell to a lower plate. Reflux, but not of the same composition of the overhead stream, was pumped back to the column; the crude charge was preheated and free steam was used as a heating medium.

Butler[1] states that the modern bubble cap with a seal to maintain a constant level on the plates was developed by Heckman[2].

The Rogers[3] petroleum still of 1871 had everything fundamental that modern columns possess, except reflux was not properly returned. But Herman Frasch's rectifying column of 1896 for stripping light ends out of kerosene was fundamentally perfect for sharp separation. Linde's low temperature columns of 1905 for separating the constituents of air represented a master development. His work was sustained by the English courts as being pioneer low temperature rectification.

Blaw, in 1913, rectified oil-gas mixtures at high pressures to produce Blaw gas. Blaw was thoroughly familiar with rectification principles. All the while a host of industries were engaged in sharply separating various mixtures according to the best principles of rectification; liquid air, petroleum, light oil, alcohol, etc.

On the theoretical side column calculations embracing binary mixtures were first worked out by E. Sorel[4] in France in 1893. Other early contributors were Barrell, Thomas and Sidney Young[5], Sidney Young[6] and Lord Rayleigh[7] and Barbet. Later ones were Rosanoff[8] and Hausbrand[9].

W. K. Lewis[10] simplified Sorel's calculations in 1909, and more lately Lewis and his co-workers, and Peters, Leslie, Robinson, McCabe and Thiele, and others, have contributed to the subject. These investigators have in the main confined themselves to binary mixtures, except as they (Peters and Leslie) have discussed petroleum mixtures.

MENTION should be made of the classical low temperature fractional distillation work of Raleigh and Ramsey in the early nineties whereby they separated the rare gases of the atmosphere and identified them. M. W. Travers[11], an associate of Ramsey's, added much to our knowledge of the laboratory handling of gases at low temperatures when he published his book on the subject. Lebeau and Damiens[12] separated, by fractional condensation, the constituents of coal gas mixtures at low temperatures in 1913. They showed the temperature at which pairs of the constituents could be removed; methane and nitrogen at the temperature of liquid air, ethane and ethylene at—120 degrees Cent., propane and propylene at —90 degrees Cent., and butane at —50 degrees Cent. These are virtually the same temperatures that the writer[13] and his associates used in 1915 in first separating the constituents of natural gas by fractional condensation. It followed Lebeau and Damien's work in France on artificial gas mixtures.

THE writer did not use regulated reflux at the top of the column. This is provided in modern laboratory fractionating apparatus with the result that the work is speeded up. What one does is to provide such a temperature at the top of the column, that is lower than the most volatile overhead product, and so the residual product will have a negligible vapor pressure at the temperature selected.

Use was made by the author in 1915 of the famous German physicist, Henning's[14] scheme for maintaining a desired low temperature. Gasoline was cooled by immersing a test tube in it and evaporating liquid air therein at a certain rate, the liquid air passing to the test tube by means of a hollow walled evacuated tube. The gasoline is stirred the meanwhile. Essentially the same plan is used today in the modern laboratory natural gas fractionating devices for cooling the reflux at the top of the colunm except that the gasoline is not stirred. In some devices a test tube is not used. Henning was the authority in his day in establishing a low temperature scale.

In 1918 De Brey of the Dutch Shell Company patented his high pressure

[1]Fractional Distillation in the Coal Tar Industry, 1922, p. 359, 422.
[2]German Patent 39557, Sept., 1886.
[3]U. S. P. 120, 539, Oct., 1871.

*Consulting Chemical Engineer, Pittsburgh.
[4]La Rectification de l'alcohol, Paris, 1893.
[5]Phil. Mag., 37, 8, 1894.
[6]Jour. Chem. Soc., 75, 679, 1899.
[7]Phil. Mag., 4, 527, 1902.
[8]Jour. Am. Chem. Soc., 36, 2000, 1914.
[9]Die Wirkingaweise der Rektifizier und Distillier apparatus, Berlin, 4th ed. 1921, 296 pp.
[10]Ind. Eng. Chem., 1, 522, 1909.
[11]The Experimental Study of Gases, 1901.
[12]Compt. rend. 156, 1913, p. 325.
[13]Technical Paper 104, 1915, U. S. Bur. of Mines.
[14]F. Henning, Ann-der Phys., 43, 294, 1913.

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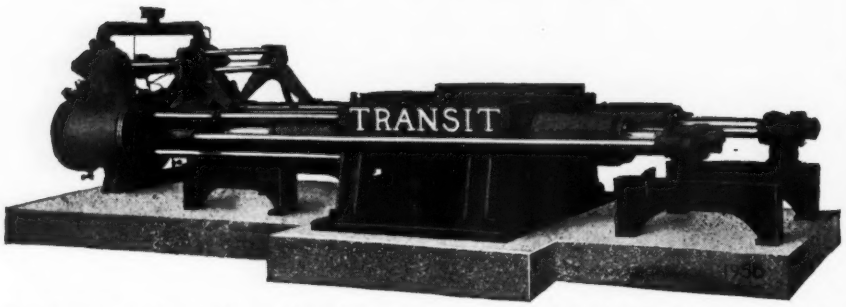

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rectifying column for sharply separating the wild constituents from natural gasoline. De Brey's claims covered all hydrocarbon mixtures. Next, in 1921, Thompson of the Union Carbide Company took what De Brey left and patented the separation of natural gasoline mixtures at low pressures. The Union Carbide & Chemicals Company then purchased the De Brey patent and proceeded to sue the natural gasoline industry in the person of the Texas and Phillips companies for infringing these patents.

There is, of course, no doubt that the Union Carbide & Chemicals Company largely introduced sharp separation of natural gasoline mixtures to an industry in the main unfamiliar with rectification principles, but four courts finally held that what was done was an attempt at monopoly by applying well known principles, to those skilled in the art of rectification, to the natural gasoline industry, and the patents were held invalid. But this glaring mistake on the part of the patent office cost the industry much apprehension and considerable money. However, it is probable that compensation lies in the fact that sharp separation of natural gasoline was introduced to the natural gasoline industry sooner than otherwise would have been the case.

The Thompson column, many of which are still used, suffers by comparison with high pressure columns because light constituents are expanded into the column too near the top and some of them escape rectification. If there are plenty of plates above the zone of entrance this effect does not occur. Some of the overhead stream must be compressed and pumped back, but in many natural gasoline commercial low pressure columns this is not done. Even if it is done the cost of recompressing and liquefying the overhead vapors so high, that this type of column is much more expensive to operate than a high pressure column.

High pressure columns are used more in the natural gasoline industry by those familiar with rectification principles than low pressure ones. A water cooled coil in the top of the column provides the necessary reflux.

Probably the first company to use precise laboratory fractionating apparatus to check up natural gasoline plant performance, at least on an appreciable scale, following the work of the Carbide & Carbon Chemicals Company, was the Phillips Petroleum Company, under the direction of G. G. Oberfell. Natural gasoline was fractionated in efficient columns and with regulated reflux. Persons who worked on the problem with the Phillips Petroleum Company were Leslie, Podbielniack, Lewis and others. Still others who have worked on the fractionation of natural gases at low temperatures include Shepherd and Porter, Davis, and Frey and Yant.

Modern laboratory apparatus for

fractionating natural gas consists of a column using Henning's scheme of holding a uniform low temperature but applying it to regulated reflux at the top of the column so that separation is speeded up in accordance with long recognized principles of rectification.

Thus we see that long before the present era of sharp separation in the petroleum and natural gasoline industries both the principles and practice of rectification had been thoroughly worked out. High and low temperatures and high and low pressures had been used. Both liquids and gases had been separated, and on laboratory and commercial scales. Regulated reflux had long been applied to the tops of towers.

New Equipment

Bullard-Davis, Inc., New York City, manufacturer of first aid and safety service equipment, has off the press bulletin 801 which describes what it calls its hard-boiled hats and caps for mine and industrial head protection. The hat weighs 10 ounces, is water and fireproof and non-conductive of electricity. The company has also developed a Red-D rubber face piece for its gas masks.

* * *

Combustion Engineering Corp., 200 Madison Ave., New York, describes and illustrates its Green natural draft chain grate stokers in a recent catalog. This stoker is applicable to boilers of all types where the load and operating conditions are such that a natural draft chain grate stoker is suitable. Typical evaporative tests and drawings showing applications of the stoker to various types of boilers are among the features of the catalog. This stoker is installed under boilers which have total rated horsepower of 1,200,000, the company says.

* * *

General Refractories Co., Philadelphia has appointed the Harris Pump & Supply Co., Pittsburgh, as its high temperature cement dealer representative in Pittsburgh territory.

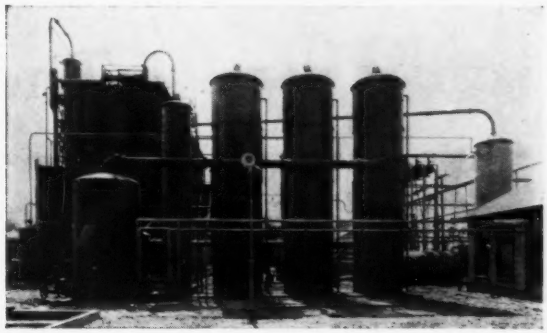
* * *

Industrial Chemical Sales Co., New York, has appointed the Floatstone Products Co., Los Angeles, as exclusive marketer of its diatomaceous earth for filtration and other purposes. The filtration grade will be sold under the name Diafilt.

* * *

William M. Wilson's Sons, Philadelphia, manufacturer of steel shipping packages and oil equipment, recently moved to 32nd St. at Cherry, Philadelphia. The new plant gives the company three times more floor space. The company is more than 100 years old, having been founded in 1819. Its oil marketing equipment department was added in 1920.

Billions of Bubbles



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Hancock Installs New Vapor Recovery System at Signal Hill Plant

By Jack N. Westsmith
N. P. N. STAFF WRITER

LOS ANGELES

INSTALLATION of an interesting system of vapor recovery and fire prevention has just been completed for the Hancock Oil Co. at its Signal Hill, California refinery.

The system is the latest "Varec" layout to have been installed and was designed by the Vapor Recovery Systems Co. of Los Angeles under the direction of Frank V. Long in conjunction with the Southwestern Engineering Corp.

Embodying newest developments of the art of vapor recovery the plant will have a daily capacity of 4000 gallons of gasoline with efficient extraction and can be made to recover between 6000 and 7000 gallons if overloaded.

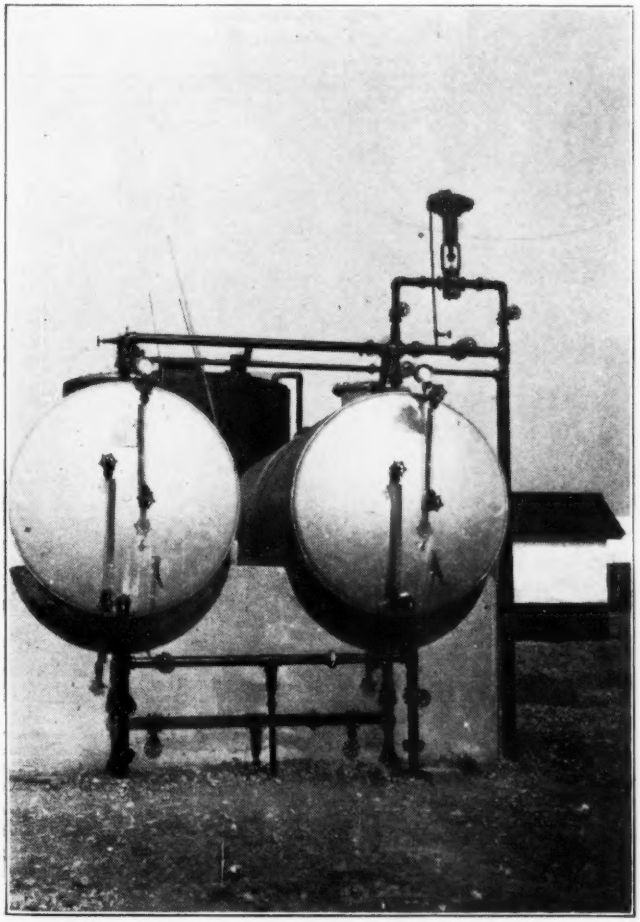
The system is now recovering the vapors from storage tanks containing 145,000 barrels of crude oil and 108,575 barrels of gasoline and is operating in connection with a refinery that has a throughput of 10,000 barrels of 29 gravity Signal Hill crude per day, 30 percent of which goes to gasoline cuts.

During the experimental work preliminary to installing the recovery system the gas flows were measured from the tanks and from the data obtained the line sizes, and compressor and absorption plant requirements were calculated.

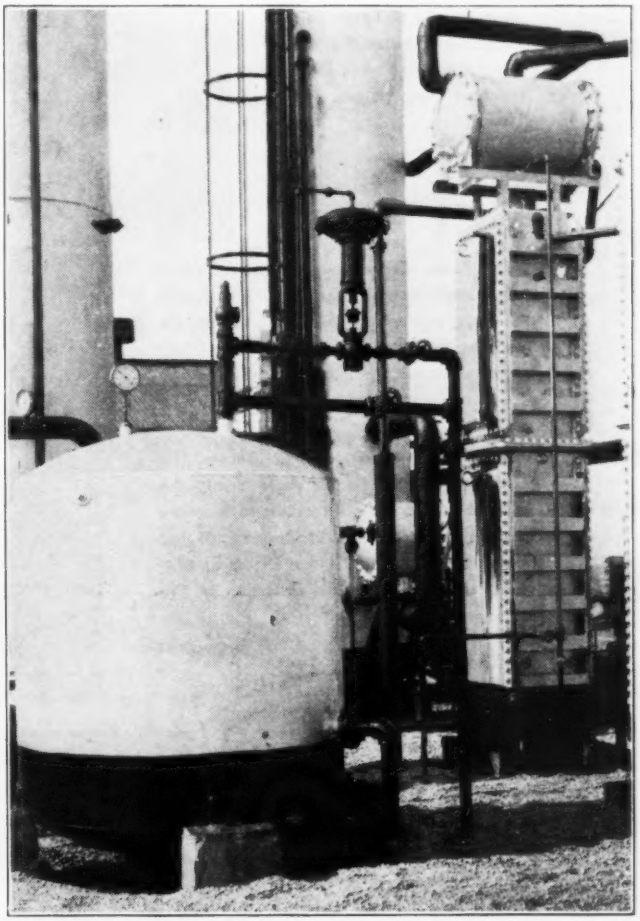
It was found that the peak loads were of sufficient duration to warrant installation of equipment large enough to handle them, instead of allowing the surplus gas during such peaks to pass into the pipe lines. Heretofore it has been common practice to disregard these peaks due to heavy installation costs.

The compressors are constant speed, electrically driven. Pressures of 30 to 35 pounds are maintained in the absorption tower, operating with an oil to gas ratio of 60 to 1. The absorption medium has an initial boiling point of 420 F. and an end point of 550 F. this medium is similar to export kerosene. The still operates under a temperature of 180 F. using gasoline reflux and making a finished product with an initial boiling point of 80 F., a 50 percent point of 180 F., and an end point of 380 F.

During test runs the still temperature and absorption medium were



Flow tanks showing method of venting into vacuum scrubber



Fat oil tank showing method of venting into vacuum scrubber

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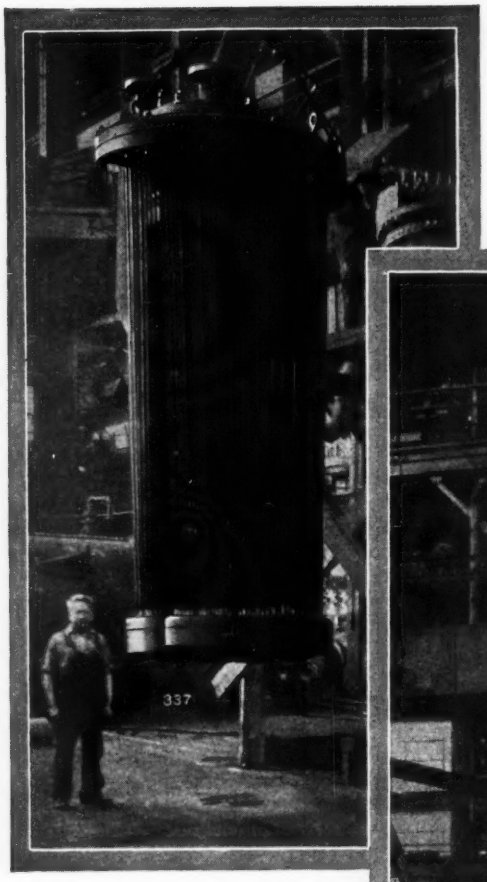
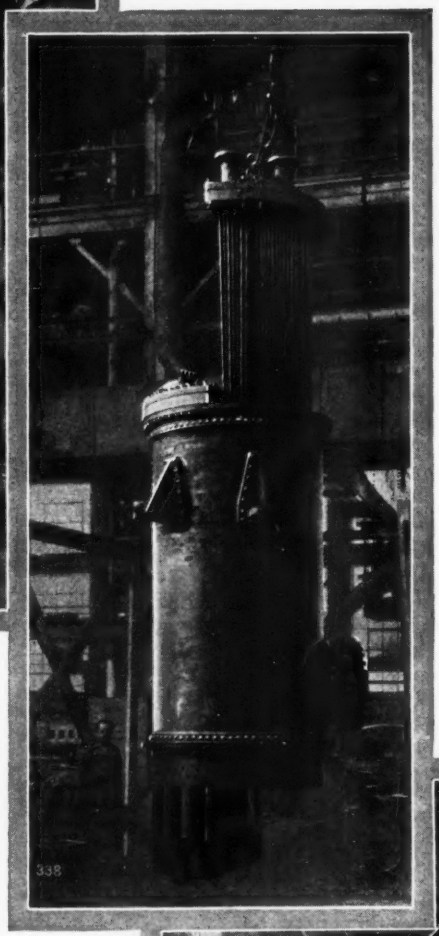
A New Design Vapor Condenser for Vacuum Distillation of Lubricating Oil.

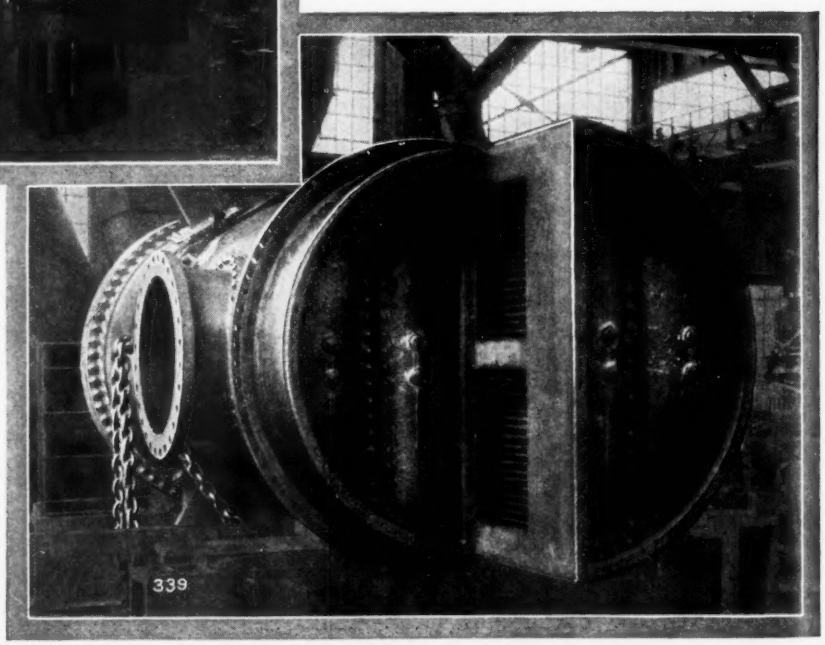
The Condenser illustrated is giving excellent service and is one of the largest Condensers ever built for oil refining.

Weight—32 tons—contains 3600 square feet of surface. Working pressure—200 pound gauge in tubes—30 m.m. absolute in shell. Similar installations have been made in many of the latest vacuum plants both here and abroad. A larger and heavier Leach Condenser is now in the process of manufacture.





Tube bundle of Leach Tower Condenser. Notice the independent floating head for the separate vapor passes.



Leach Tower Condenser with one-half of tube bundle partially removed. The slots at the base are for the admission of the vapors. The free area is equivalent to an 8-foot diameter vapor pipe.

View of the base of same Condenser. The portion below the flange projects into the tower shell. Vapors gain access to the tube bundle through the slotted opening, the hemispherical ends of the shell being provided with covers for the collection of the lubricating oil distillate.

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LEACH

changed from time to time and so delicate is the control that it was possible to make a finished product of 420 end point without shrinkage of the absorption medium, but since the product is used for blending the specifications call for an end point of only 380 degrees.

The recovered gasoline is 30 color, doctor sweet and shows variously from day to day a recovery of from 70 to 80 percent at atmospheric pressure, and without a stabilizer.

Since installation the plant has averaged 2600 gallons per 24 hours from an average of 475,000 cubic feet and engineers state that the entire outfit will pay for itself at least twice per year. That is the owners expect to gross approximately $100,000 per year or considerably more than twice the cost of installation.

Only gas which would otherwise vent into the air is drawn into the system, each tank being kept at all times under a slight positive pressure by frictionless regulators.

Residue dry gas is returned to the tanks through specially built frictionless regulators and tests show the gas in the tank to have a minimum air content of 6 percent and a maximum of 10 percent. These mixtures are far below the combustible or explosive temperatures so that, any common fire hazard is greatly reduced, if not entirely eliminated.

As the dry gas contains about 1050 b. t. u., apparatus is now being installed to allow the burning of any surplus gas in the fire boxes of the stills, that is, any surplus not required to repressure the tanks.

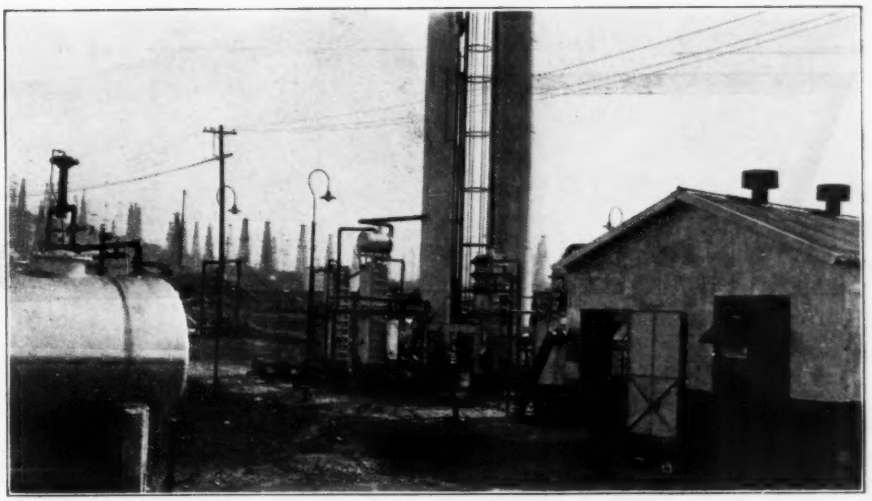
It is pointed out that a nearly stable product is manufactured by maintaining a series of varying pressure on the still, tower, weathering tank, and run tanks.

A novel feature in this connection, in the Hancock layout, is the arrangement by which the absorption system is kept entirely closed. The weathering tank, run tank, and gasoline receiver all venting into a common container, which pops to the suction of the compressor and recycles the weathered gas.

A series of pilot-controlled regulators prevent the system from becoming gas-logged, guaranteeing the proper supply of dry non-combustible gas for repressuring and also diverting any surplus to the stills.

As an extra precaution, safety devices of the latest proved types have been installed to guard the tanks against failure of equipment. Each tank is taken as a unit so that in reality, the engineering and design of the tank-equipment-hook-ups offers practical safety.

In addition to the recovery system Hancock has just "blown in" a Southwestern continuous cracking plant and in connection with this addition, Vapors Recovery Systems Co. will install a caustic wash and an auxiliary compressor to draw gas into the recovery system. The caustic wash being installed to eliminate the corrosive sulphur compounds, which are always present in cracked gas. Such compounds as hydrogen sulfide and mercaptans. It is expected that these installations will result in a better gasoline being produced at a lower cost.



General view of recovery plant showing compressor house and absorption plant

Standard Viscosity Test Oils Available to Refiners

CHICAGO

MEANS of calibrating viscosimeters for testing lubricants and fuel oils by nationally recognized and approved standard test oils will be available shortly to every refiner in the country, according to an announcement by Dr. T. G. Delbridge of the Atlantic Refining Co. at an informal meeting of Committee D-2 of the American Society for Testing Materials at Chicago.

Dr. Delbridge has prepared two test oils, selected with great care and attention to obtaining oils of the desired characteristics for the purpose he has in mind. A special Saybolt viscosimeter tube, manufactured by the American Instrument Co., has been purchased and turned over to the U. S. Bureau of Standards for use in standardizing these oils.

Sample Alpha, as one of the oils is to be known, is to be used to calibrate and check Saybolt Universal Viscosimeter tubes at 100 F. Sample Beta is to be used for the two-fold purpose of checking Saybolt Universal tubes at 210 F. and also the Saybolt Furol tubes at 122 F.

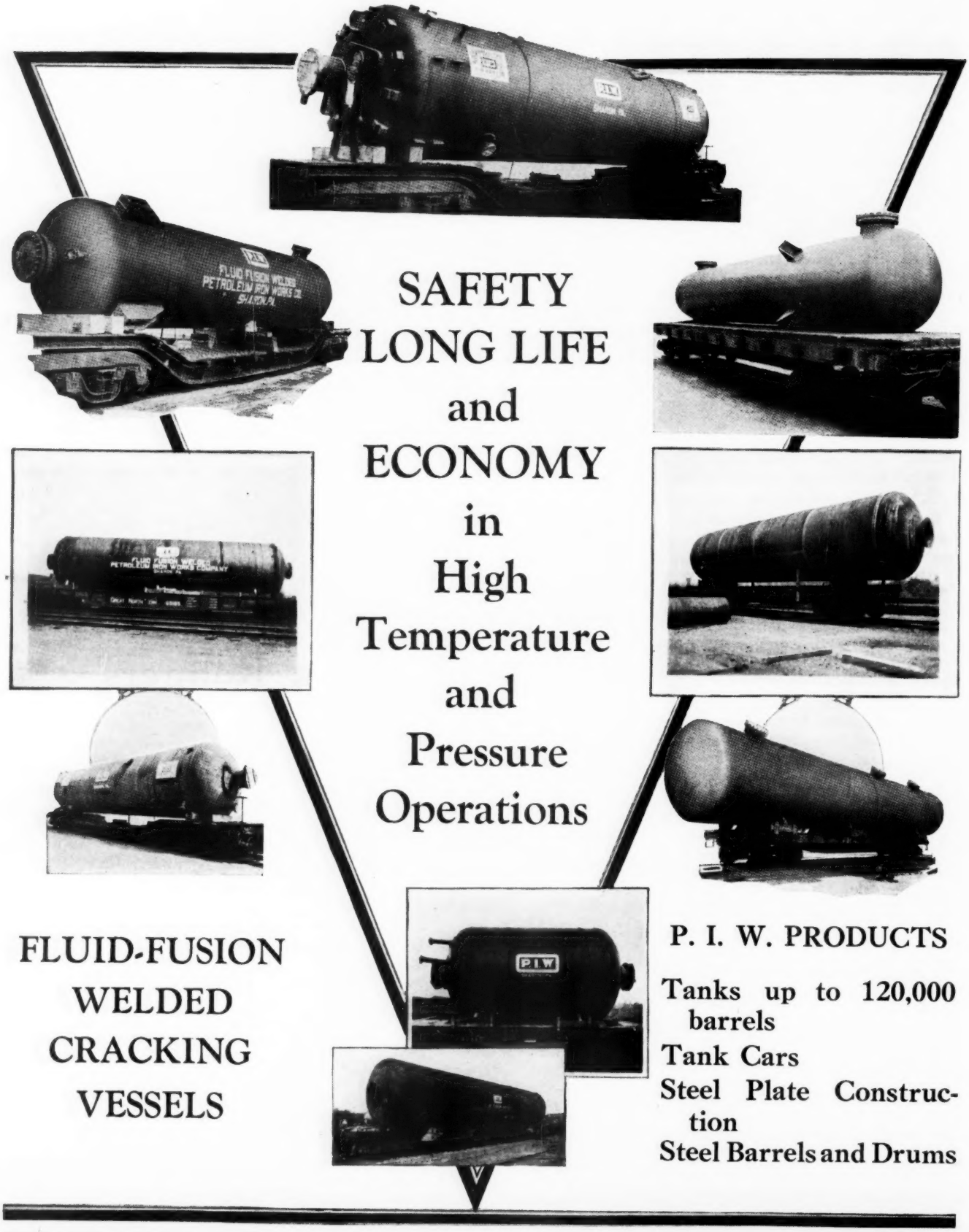
A large quantity of each oil has been prepared and a sample of each will be sent the Bureau of Standards. The bureau will standardize these samples by testing them in the special tube provided for the purpose, as well as in the master viscosimeter tube kept at the bureau.

Samples of the oils will be furnished to any refiner at a nominal charge, accompanied by a certificate from the bureau giving their viscosities at the temperatures and in the tubes indicated. The refiner can by this means frequently check his own instruments with the standard oils, and thus be certain of the accuracy of the determinations made in his laboratory.

From the proceeds of the sale of these standard samples it is intended to prepare other samples for the calibration of other test apparatus in use by refiners. Such a procedure will enable each refiner to keep his apparatus calibrated and the results obtainable therefrom comparable with similar determinations made in other laboratories anywhere in the country.

"I have a vision of the standardization of all the test apparatus used by the refiner," says Dr. Delbridge. "This is only the initial step in the process of providing each refiner with a means of checking and calibrating his testing apparatus so he may be certain he is in step with the rest."

Further information regarding this plan may be obtained from the Bureau of Standards, Washington, D. C., or from Dr. T. G. Delbridge, Atlantic Refining Co., Philadelphia, Pa.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Interest in Reclamation of Crankcase Oils Becoming More Widespread

By Arch L. Foster
N. P. N. STAFF WRITER

CRANKCASE drainings are being collected, rerefined, and sold for automotive and other uses on a commercial basis in a dozen or more cities. While the total amount of oil thus processed and sold is not large, the fact that this new "industry" is spreading rapidly is indicated by the location of the cities where rerefining of used oils is being carried on.

No instance of the sale of this rerefined of used oils is being carried on.

No instance of the sale of this rerefined oil as new oil is known, but it is offered as reprocessed oil usually at a price slightly lower than that paid for new or unused oil. Establishments for reclaiming and marketing such lubricants are operating or being organized in Washington, St. Louis, Los Angeles, Chicago, and various other cities.

In addition to these commercial organizations numerous taxicab companies, trucking firms, and other large users of motor lubricants are installing rerefining plants of various designs for "cleaning up" their own used oil. This will have an appreciable effect on the demand for fresh oil as has been the case with "oil purifiers" with which many modern cars are now being equipped.

New dignity was accorded rerefined oils recently when the U. S. Bureau of Standards issued a report on the Bryte-Hanke reclamation process which indicates that a good grade of oil can be produced by that method. The process is a combination of agglomeration, filtration, and vacuum distillation operations designed to completely refit the oil for use in the automotive engine. Regarding the details of the method, and the results obtained, the report states:

"The oil is heated from 160 to 180 F. before the chemicals are added, and heating is continued to drive off all moisture so that danger of foaming the still is avoided. After the treated oil has stood overnight, the scum which forms on the surface is removed. The oil is then poured into the still, taking care that the sediment of precipitate is separated from the oil.

"The separation is not complete, and most of the oil lost in the process is due to that remaining in the sediment. Ordinarily 3 pints of oil are treated to obtain 2½ pints to put in the still.

"Table 1 shows the approximate yield from two runs. Oil No. 1 was obtained from the Sewer Department and oil No. 2 from the Municipal Garage, District of Columbia.

Table 1

Volume put in Still and Recovered

	Oil No. 1 (ml)	Oil No. 2 (ml)
Put in Still	1065	1180
Diluent	85	60
Light Distillate	310	290
Medium Distillate	240	230
Heavy Distillate	225	350
Still Residue	100	75
Total Recovered	960	1005
Per Cent Recovered	90	85

"About two hours is required for a distillation, the temperature being gradually increased. For oil No. 1 the final temperature was 667 and for oil No. 2 was 680 F. The air pump is kept running, after turning off the heat, for about half an hour or until the heavy distillate has stopped coming off.

"In commercial operation a longer time is required to heat the larger volume of oil. A separate condenser is used for the diluent to prevent the flash point of the light distillate from being lowered by the diluent. This also prevents the diluent from being contaminated by the heavy oil remaining in the piping from a previous run. In the demonstration apparatus only one condenser was used so that that flash point of the light distillate was inevitably lowered.

"Table 2 gives results of examination of products obtained from oil No. 1 while similar results from products of oil No. 2 are given in Table 3. The light, medium and heavy distillates, as well as the new oils, all passed the corrosion test.

"The heavy distillate of oil No. 2 had a viscosity, Saybolt Universal at 210 F of 73 seconds. The diluents were merely subjected to a distillation test by the standard method for kerosene. The diluent from oil No. 1 showed an end point of 644 F when 49 per cent had been distilled off, and a residue of 0.8 per cent. For oil No. 2 the end point was 687 F, the distillate was 49.5 per cent and the residue was 0.5 per cent.

"The ash from sludge formed in treating the used oils proved to consist mainly of sodium carbonate, which might result from soap contained in the used oil before treatment.

"The effect of the preliminary treatment of the used oil is shown by the decrease of ash. It would be expected that the precipitation of the sediment would lower the viscosity, as shown in Table 2, but in Table 3, the viscosity is apparently increased by

Table 2

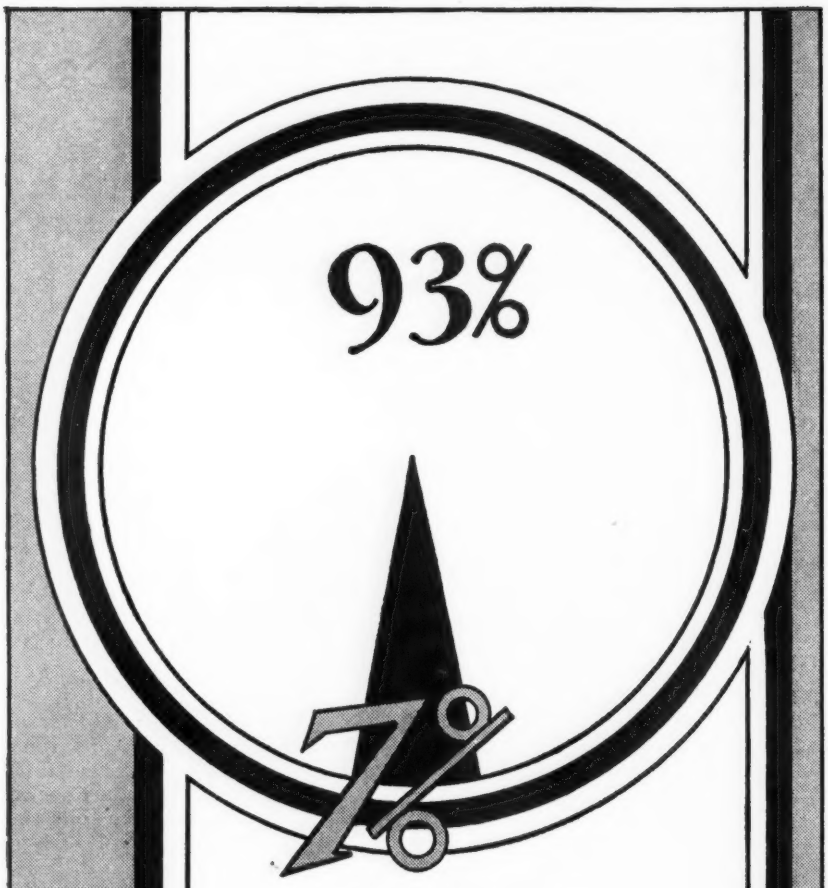
Oil No. 1 from Sewer Department

	New	Used	Treated	Distillates Light	Med.	Heavy
Viscosity, Saybolt Univ. 100 F	495	265	250	115	575	1710
Flash Point, deg. F	370	.....	.....	280	395	420
Union Color, No.	5	.....	.....	3	3½	4
Pour Point, deg. F	B 20	.....	.....	B 20	B 20	40
Neutralization No.	0.05	.....	.....	0.30	0.30	0.18
Carbon Residue, per cent	0.12	.....	.....	0.03	0.04	0.13
Ash, per cent	.....	0.11	nil	.....	.....	.....
Dilution, per cent	.....	12.4	12.4	.....	.....	.....

Table 3

Oil No. 2 from Municipal Garage

Viscosity, Saybolt Univ. 100 F	407	290	320	120	437	1314
Flash Point, deg. F	430	.....	.....	375	400	440
Union Color, N.	8	.....	.....	3	3½	4½
Pour Point, deg. F	45	.....	.....	B 20	B 20	25
Neutralization No.	0.10	.....	.....	0.09	0.27	0.18
Carbon Residue, per cent	0.43	.....	.....	0.01	0.04	0.16
Ash, per cent	.....	0.40	0.02	.....	.....	.....
Dilution, per cent	.....	8.8	8.8	.....	.....	.....



OF THESE COMPANIES WILL REALIZE NEW SAVINGS

OF THE 32 companies (and their subsidiaries) operating 4/5 of the refining capacity of the country, 93% are using OCECO Equipment.

Possibly your company is in this 93% group and knows by experience how OCECO Fittings conserve the volatile dollars that otherwise evaporate, and provide the surest protection against fire.

Or—in the event you have not yet Oceco equipped, *new earnings are in store for you.* Each year the number of Oceco users increases until today only 7% (of the group operating 80% of the refining capacity) have yet to realize Oceco economies.

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the treatment. This may be due to the presence of unprecipitated sludge in the sample of treated oil used in determining viscosity.

"The still residue of oils No. 1 and No. 2 were examined in order to determine their value as lubricants. The former has a viscosity of 616 seconds, Saybolt Furol at 122 F. with 1.6 per cent of ash, while the latter has a viscosity of 406 seconds and 0.98 per cent of ash. As the ash consisted mainly of sodium carbonate, the amount of ash is not necessarily objectionable. The viscosities are higher than for any oil listed in government specifications but the residue might be used for gear lubrication.

"Tests on the three distillates were compared with the government specifications for automobile oils. The light distillates of both oil No. 1 and No. 2 are of lower viscosity than the automobile oil of extra light grade in specifications, and in the case of light distillate of oil No. 1 the flash point is lower than the specified temperature of 315 F. This low flash point, however, may be attributed to contamination by the diluent, as previously explained.

"The medium and heavy distillates meet the requirements, especially well in regard to color and carbon residue, even for oils of considerable higher viscosity. The neutralization number is in no case higher than 0.30, the highest value permitted. Thus with the exception of the low flash point in one distillate, which is readily explained, all distillates pass the even more stringent specifications for oils of higher viscosity."

It must be borne in mind that the proper rerefining of used oils requires quite as great skill and technical ability in the operation of the plant as is employed by the refiner who manufactures fresh lubricants from the original crude. Any practicable rerefining process must provide for the removal of two types of foreign materials, solid matter, which is formed during the use of the oil or introduced as contamination from outside the engine, and liquid diluent and water, which reach the crankcase from the combustion chamber.

Used oils contain carbonaceous material formed by the decomposition of the oil, which finds its way into the combustion space and is cracked by the heat of the explosion. Particles of sand, road dust, metal from bearings, etc., also collect in the oil sump and decrease the lubricating efficiency of the oil.

This material is removed by coagulation or agglomeration with metal resinates, or a solution of sodium silicate (water glass), as in the Van Brunt process, with tri-sodium phosphate in the McBerty patents, or numerous other coagulants. This is followed by settling or centrifuging to remove the mass of waste matter. Pearce passes the heated oil upward

through tower fitted with alternate baffle plates to remove foreign material.

Gasoline, condensed in the cylinder by compression and contact with relatively cold cylinder walls, and water vapor formed during combustion of the fuel, are removed by passing the clarified oil in a thin film over a heated surface in the Van Brunt and other methods. More recent processes, as the Refinoil, Rosenbaum, and Bryte-Hanke, employ vacuum, or steam distillation apparatus for the removal of the diluent, followed in the last mentioned method by redistillation of practically all the oil into various cuts, which may later be blended to obtain commercial oils of the desired viscosities. The use of steam or vacuum, or a combination of the two, should facilitate obtaining a finished oil of good color, since with proper technique cracking of the oil may be avoided.

The Bureau of Standards report further states that, "used oils, drained from the crankcase of automobiles and similar waste oils, may be rerefined and made at least as good as new by appropriate treatment."

With any method of reclamation the relative degree of excellence of the finished product will depend in great measure on the technical skill, training and experience of the operator of the process.

Manufacturers of new oils from crude have through many years of effort and experience developed the technique of refining to a comparatively high degree to produce the motor lubricants now offered to the consuming public. It is necessary that the organizations which endeavor to produce firstclass lubricants from used oils possess or acquire a similar skill in carrying out technically correct methods before they produce their best products.

The development of this skilled technique will come as the result of a broad general experience with the problems involved, which experience most of the rerefiners are at present just beginning to acquire. The best results cannot be expected until the art of rerefining is more highly developed than at present.

Tells How To Clean Tank Cars

NEW YORK, Dec. 6.—The cleaning of oil tank cars was a subject discussed at the twenty-first annual sales conference of Oakite Products, Inc., which specializes in industrial cleaning materials and methods. The meeting was held at the company's general offices at 22 Thames street here on Nov. 20 to 23.

It was attended by 110 district managers and representatives of the company in this country and in Canada.

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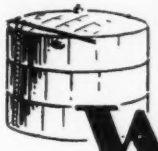

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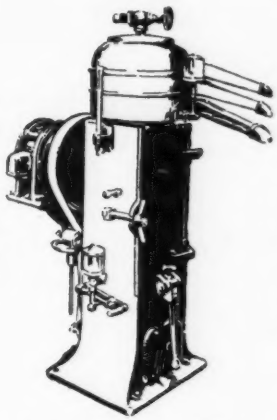

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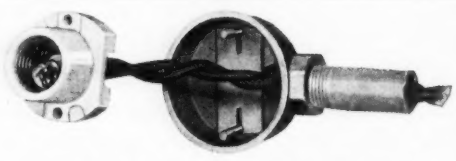

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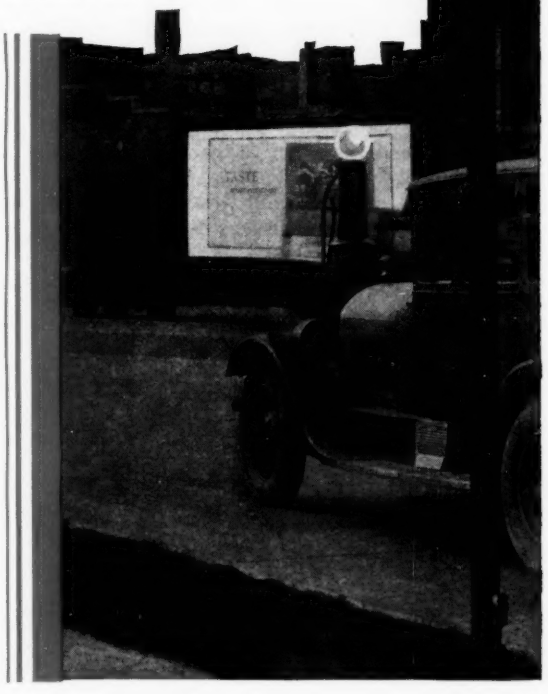

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Demand for Anti-Knock Gasoline Shows 100 Per Cent Increase This Year

By J. C. Chatfield
N. P. N. STAFF WRITER

CLEVELAND

AN ASTONISHING increase in demand for anti-knock motor fuels has taken place in the United States in 1929, according to a survey by NATIONAL PETROLEUM NEWS.

From available sources of information it appears that the increase in demand for anti-knock fuels sold at a higher price than ordinary grades will approximate 100 per cent.

The most widely advertised and sold brand of anti-knock fuel of course is Ethyl gasoline. In 1928 total sales of Ethylized gasoline approximated 550,000,000 gallons. This year it is estimated by the company, on the basis of sales to October, that the total will be 1,100,000,000 gallons.

Total domestic demand for gasoline in 1928 was 13,810,944,000 gallons according to reports of the U. S. Bureau of Mines. The sales of Ethyl thus approximated 3.9 per cent of the total gallonage of the country. This figure for domestic demand includes of course larger quantities used for industrial purposes where anti-knock features are not sought.

Normally gasoline shipments in the first nine months of any year approximate 74.37 per cent of the total for the year. On that basis it may be expected that domestic demand this year will be approximately 15,868,000 gallons. If that figure is attained the sales of Ethyl gasoline will be about 6.9 per cent of the total domestic demand.

It is understood that Ethyl sales in July of this year approximated 160,000,000 gallons. On the basis of that figure it would appear that the estimate of 1,100,000,000 gallons for the year given by the company is conservative. With three months still to go after Oct. 1 it is possible that the increase in Ethyl sales may run more than 100 per cent.

It will be remembered that in a large part of the middle west, where the Standard Oil Co. of Indiana is a dominant factor, Ethyl gasoline was not available for sale by Independent marketers until about the first of last April. The Standard of Indiana had an exclusive contract in 11 states prior to that time.

To ascertain the trend of demand for anti-knock motor fuels in the middle west, NATIONAL PETROLEUM NEWS sent letters of inquiry to a group of Independent marketers in that area. Names were selected at random to give a wide geographical spread and to include both large and small Independents, none of whom have refineries.

Out of 70 replies received, 65 Independents were handling a special anti-knock gasoline which is being sold at a premium over the regular grade of competitive motor fuel. Only five jobbers reported that they are not handling a premium anti-knock fuel. Of these five one reported that he demands an anti-knock gasoline from his refiner to sell at the competitive price. He reported that he obtains a grade with a 35 per cent benzol equivalent. Another jobber who sells a premium product reported that he demands 24-28 benzol equivalent for his competitive grade.

Two jobbers sent letters in connection with their answers to the questionnaire giving their opinion that the time is coming when all grades of gasoline will have to possess anti-knock qualities in order to sell readily. These opinions were volunteered since no question had been asked on that subject. Following are the two comments:

"WE BELIEVE that good marketing requires now, or will require soon, that ordinary motor gasoline have an anti-knock characteristic high enough to operate satisfactorily in cars of moderately high compression. There are a number of low or medium priced cars on the road that operate satisfactorily on ordinary motor gasoline when the combustion chamber is clean but give a decided ping when even slightly fouled with carbon deposits.

"A very high percentage of owners of these cars will not pay a premium for motor fuel. We do not know the benzol equivalent of a motor fuel which will operate these cars satisfactorily but estimate that about 30 per cent will be sufficient."

In this connection it is interesting that quite a number of the operators of the new Fords and other low priced cars are reported as asking for a blend of ordinary and anti-knock gasoline. Many drivers ask for half and half, thus bringing the average price for a fill down to 1.5 cents per gallon over ordinary fuel. The following comment is from an Indiana jobber:

"There is every indication that it will not be long until the regular 58-60 U. S. Motor gasoline will be replaced by gasolines having anti-knock qualities. The new type, high speed, high compression motors knock on common gasoline and the only way to overcome this is to use a fuel that has anti-knock qualities."

JOBBERS were asked in the questionnaire to indicate the percentage of special anti-knock gasolines sold to total gasoline sales at the present time and to compare these with figures from the previous year where that was possible.

In response to this question 31 jobbers reported the ratio of anti-knock gasoline to total sales at the present time. Two jobbers out of this group said that the special fuels now represent 50 per cent of their total gallonage. Since May, 1928, one of these two jobbers reported his sales of anti-knock have increased from nothing to one-half of his total sales. This jobber sells a special refinery product reported to be from a vapor phase cracking process. The other distributor handles an Ethyl gasoline.

Five out of the 31 reported that anti-knock gasolines represent 40 per cent of their total sales. The lowest ratio reported was 18 per cent of the total. The average of the 31 reporting in terms of percentage of total sales was 29.85 per cent.

Of the 31 who reported on the percentage of anti-knock sales, only 17 gave a comparable figure for the previous year. Three of the 17 stated that anti-knock sales last year totaled 25 per cent of their total business and four reported 20 per cent anti-knock sales. The average of the 17 was 15.69 per cent.

Some of the jobbers reported in terms of per cent of increase in sales of anti-knock gasolines. These as a rule show a lower ratio of increase than the 31 mentioned previously. One jobber reported a decreasing demand for anti-knock gasoline and two reported no increase. Nine reported increases ranging from 2 to 25 per cent. The average of the group was 12.72 per cent. Taking the

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UNMATCHED IN SERVICE AND DURABILITY—

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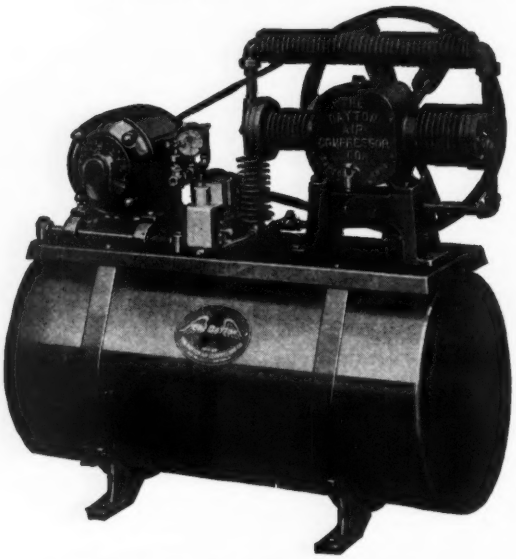
The most searching comparison will result in favor of this model, which is shown and described below.



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Two-Stage Model:—
2 H.P. Motor—
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150 lbs. capacity—
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31 on the basis of increase it will be observed that the growth has been around 100 per cent.

Each jobber was asked whether he pays a premium over and above the price of ordinary gasoline to obtain his special product. Of the 65 who reported handling special fuels 62 answered this question and all reported paying higher price.

The highest premium being paid by the 62 jobbers is 3 cents per gallon and the lowest 0.75 cent per gallon. The average premium being paid is 2.11 cents per gallon. Twenty-five of the 62 are paying 3 cents per gallon.

Each jobber was asked to indicate the source of his special anti-knock gasoline, by refining district in case he was not selling Ethyl. Answers were given by 55 jobbers to this question. Seventeen of the 55 are selling Ethyl.

The closest competitor of Ethyl in Indiana territory appears to be Smackover gasoline refined in Arkansas and Louisiana. Thirteen jobbers reported that their special fuel comes from plants in that area running Smackover crude.

Other sources reported were: Oklahoma, 8; Texas, 4; Kansas, 4; Mid-Continent, state not specified, 3; miscellaneous branded products of individual refiners, 6.

Jobbers who are not buying Ethyl gasoline and hence selling a fuel which meets the anti-knock specifications of the Ethyl Gasoline Corp., imposed on all blenders, were asked what requirements they make in the way of benzol equivalent for the special anti-knock fuel sold. The question was answered directly by 31 jobbers.

The highest anti-knock rating required by the jobbers reporting was 60 per cent benzol equivalent. Three reported that requirement and two a requirement of 50 to 60 per cent. Three require a benzol equivalent of 55 per cent and seven 50 per cent. The lowest requirement stated was 25 per cent by two jobbers. The average of the 31 was 45.8 per cent benzol equivalent.

Inquiry was made as to whether independent tests are made for jobbers to determine whether the gasoline they receive is up to required standards. Fifteen jobbers reported having tests made from time to time. Several gave the names of laboratories such as those of Dr. G. G. Brown at the University of Michigan and the Kansas City Testing Laboratories.

One jobber reported that he has every car checked by Dr. Brown's laboratory and requires a 50 per cent benzol equivalent on his scale. Ethyl tests 51 per cent on that scale. This jobber buys a Smackover gasoline.

Several jobbers reported that they make rough tests for performance in a high compression motor car. Others reported that they accept the ratings given by their refinery sources of supply.

How Semi-Trailers Have Been Applied To Petroleum Hauling

By A. W. Kenerson*

(Presented before American Petroleum Institute, Chicago, Dec. 3 to 5)

MR. KENERSON, who operates more than 150 semi-trailer units for the Standard Oil Co. of Ohio, told the automotive transportation group of the institute how the hauling problems of an oil company should be analyzed to determine the specifications of truck equipment it buys.

The semi-trailer, he said, provided a good type of equipment because of its flexibility (interchangeability of tractors and payload units) and continuous operation because the payload unit may be kept in service although the tractor unit must go to the repair shop.

Details of mechanical specifications and where the tractors used in hauling semi-trailer tanks or stake bodies deviated from standard specifications in order to meet requirements of semi-trailer hauling, were outlined.

A CAREFUL study of the application of the semi-trailer to the petroleum transportation problem from the operator's viewpoint reveals many possibilities not apparent on the surface, and it is with this phase of the subject that I wish to deal, giving you as briefly as possible the benefit of our analysis in connection with the various items of our specification.

It might be a far-fetched thought to have a tractor in Cleveland, regardless of make, interchangeable with trailers throughout our entire field of operation. This consideration, however, provides great possibilities from the standpoint of flexible and continuous operation, which is comparatively easy to accomplish provided the specifications are set up with that idea in mind.

To that end, the development of the light tractor and semi-trailer unit as used by the Standard Oil Co. of Ohio began with the specifications for the trailer which called for a semi-drop frame trailer designed to be applicable to a dozen or more different tractors, a list of which was submitted to the engineering department of the trailer manufacturer.

Incorporated in this list were tractors of extreme heights, widths, etc., in order to be sure that the trailer would be universal in its application to any tractor we might desire to use. The trailer is 110-inch wheelbase and fitted with manually operated jacks, which we consider a definite part of the operation.

The next item to be specified was wheels, and here enters one of the compromises incidental to the use of the light truck as a tractor which should be given careful consideration to obtain the best results. By way of explanation let me call to your attention the fact that the tractor originally designed to move a gross weight (chassis, body and payload) of approximately 4000 pounds is now being used to move a gross weight of approximately 12,000 pounds, and while it is true the tractor carries only one-third to one-half of the *payload*, due consideration must be given the starting and stopping of this increased gross weight wherein gear tooth pressures are stepped up as well as shear on wheel studs and the wheel stress in general.

This applies not only to the tractor driving wheels, but to the trailer wheels also, due to the use of power brakes. To that end we felt it necessary to obtain a heavier duty wheel with a larger bolt circle and larger diameter of studs than that furnished as standard equipment by the manufacturer, at the same time being careful to avoid the selection of one that

*Director of Automotive Transportation, Standard Oil Co. of Ohio. A description of the Standard of Ohio's semi-trailer fleet was published in NATIONAL PETROLEUM NEWS for Oct. 30, 1929, page 254.

A light truck tractor with 750-gallon semi-trailer tank

1879 GOLDEN ANNIVERSARY YEAR 1929

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that you specify . . .

100% Pennsylvania Motor Oils

Don't specify simply "100% Pennsylvania Motor Oils." Specify "FREEDOM 100% Pennsylvania Motor Oils."

Then you sell a perfected blend made from 460-470 flash Bright Stock (Sharples Process) and 100% Pennsylvania Crude high flash Neutrals.

Both are made in the two complete plants of an organization which for fifty years has specialized in the refining of 100% Pennsylvania Crude. The Bright stocks are refined in the Coraopolis plant and the Neutrals in the Freedom plant.

All the experience of fifty years has gone into FREEDOM 100% Pennsylvania Motor Oil. Sell it—fear no competition. Write for quotations. Deliveries available in tank cars, compartment tank cars, barrels, or drums.

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Also available for immediate shipment

460-470 flash, minimum 85 Visc., low cold test Bright Stock (Sharples process).

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100% Pennsylvania Motor Oils, blended to your own specifications from FREEDOM 460-470 Bright Stock and FREEDOM 100% Pennsylvania Crude high flash Neutrals.

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might be too heavy for the front axle steering mechanism. Furthermore, we desired, if possible, to obtain a trailer wheel that would be entirely interchangeable with one or more makes available on the various tractors, thus obtaining a second source of supply.

The method of arriving at this conclusion might be of interest. A work sheet was set up listing the manufacturers' specifications of the various tractors. In this particular instance, both standard and optional wheel equipment was shown. The more universally used equipment was apparent at once and this comparative study made it possible to arrive at the desired specifications.

The item of trailer brakes was also given careful consideration, believing that the tractor brake maintenance could be reduced to a minimum in the event the trailer brakes, which are operated by the vacuum booster brake, were of such dimensions as to provide for more than half the braking. This is also beneficial from the standpoint of tractor frame stress reduction as compared to the situation in the event the tractor was doing most, or all, of the braking. In this instance the manufacturer's recommendation was accepted.

The tank specifications were constructed around the limiting factors set up by the capacity desired and the trailer dimensions. These tanks are four compartment, fitted with emergency valve equipment of various types.

The tractor for this operation should be fairly fast and have the necessary acceleration to maintain its place in present day traffic. In an effort to accomplish this we endeavored to obtain tractive effort sufficient to negotiate a 3 per cent grade with maximum gross weight in direct gear and with rear axle gear ratios that would permit a road speed of 30 miles per hour at approximately 2000 engine revolutions per minutes.

The cab is an important item that should not be economized on. The driver should be provided comfortable protection against the weather; interest shown here by the purchaser is definitely reflected in the care received by the equipment. We do not believe, however, that this type of equipment justifies the expense incidental to the use of upholstered deluxe type cab. We find it possible to obtain a fully enclosed cab of deluxe lines, comfortable, roomy, and with clear vision, that to date has stood up well.

The next move in the development of this unit was the adaptation of the various tractors to the trailer with tank mounted. This proved to be a comparatively simple operation due to the provisions made in the original design of the trailer. Each fifth wheel hook-up was worked out from the actual assembly with the tank loaded

in order to obtain proper levels, etc. In this connection, variation in spring deflection had to be taken into consideration. A record in chart form for future use has been made of these assemblies, the record showing the following fundamental dimensions: Chassis wheelbase, distance back of cab to center of rear axle, height and width of frame, location of vacuum brake connections, distance back of cab to center of fifth wheel, and height of wood shim under the fifth wheel.

The simplicity of the universal application of the various tractors to the trailer will be noted by the fact that the characteristic differences of these assemblies per make or model of chassis is confined entirely to fifth wheel location and height of shim under same.

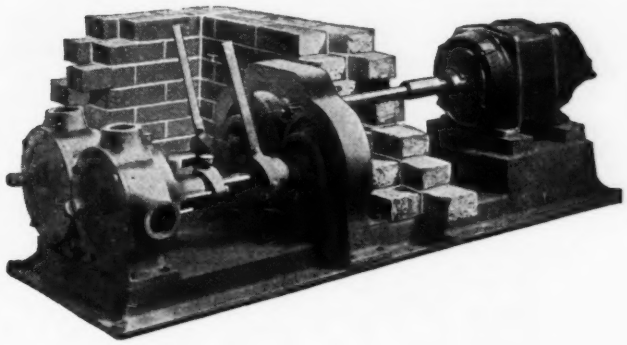
Our program is further simplified by the fact that the 1000-gallon tank is mounted on the same trailer chassis as the 750-gallon tank. The only detail changed is the tire specification which is changed from 30 x 5 dual pneumatics to 32 x 6 dual pneumatics, the wheel selected providing proper spacing for the 6-inch tire.

There is a slight compensation from the weight standpoint in this set-up due to the 1000-gallon unit being used as a small town service station truck. In this instance the drum carriers are omitted, reducing the weight 800 to 900 pounds.

Furthermore, we have in operation several 15-barrel capacity semi-trailer drays, the fifth wheel of which is designed to hook up with these same tractors. As a matter of fact, we have two or three installations where one tractor is operating as a shuttle unit between a tank trailer and a dray trailer.

We now come to the problem of properly allocating this equipment in the field. In view of the tractive ability of the tractors varying to a certain extent, it was necessary to obtain definite information regarding the operating requirements which also vary. To that end we set up a numerical designation of these operations: No. 1 being an improved road operation, 5 to 10 per cent of which might be grades; No. 2 improved roads, 50 per cent of the operation involving grades; No. 3 an operation 75 per cent of which required negotiating grades; or a No. 1 and No. 2 operation with unimproved roads; requesting that our territorial men specify on their requisitions for new equipment the type of operation in which it was to go. In this manner the equipment was spotted in the territory to the best advantage.

I wish to bring out the flexibility of operation made possible by this universal application of tractors of the various makes to tank and dray trailers throughout the state. We have already had the experience of a tractor going out of service as the result of a rather serious accident, which



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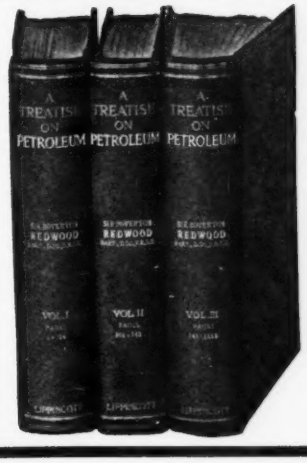

Information on all branches of the petroleum industry is to be found in the 4th edition of A TREATISE ON PETROLEUM by Sir Boverton Redwood.

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NATIONAL PETROLEUM NEWS
1213 W. 3rd St. Cleveland, Ohio

made necessary the replacement of front axle, frame, engine bell housing, all of which required a lay-up of 10 days.

Incidentally, this particular tractor was operating as a shuttle unit between a three-ton dray and a 1000-gallon tank trailer, but due to this arrangement the payload end of our equipment went back into service the next morning as a result of being able to dispatch another tractor to that location.

It is also a part of our program to provide our field mechanics with a Ford tractor equipped with fifth wheel and the customary field maintenance tool equipment. As you are aware, it is difficult to take a piece of equipment out of service during the peak season for any extensive maintenance operations.

All too often the driver will report that the valves require attention, the rear axle is noisy, and the brakes need adjusting, and in the same breath he will request that the brakes be fudged up and he be allowed to continue in operation as he is already behind on schedule.

The danger of this, of course, is apparent. The operator is courting more extensive repairs by allowing valves to continue in operation not properly seating or without proper clearance. A noisy rear axle often is the result of improper gear adjustment, continued operation of which means flirting with complete failure.

You will note that the situation is now changed with the arrival of a field mechanic equipped as above described, who upon hearing this same story merely advises the local driver to detach the tractor and he, in turn, turns over to him the Ford tractor which now functions in the dual capacity of providing the field mechanic with transportation and a temporary tractor permitting the driver to continue on his schedule uninterrupted only to the extent of the tractor transfer.

This arrangement, together with the complete replacement tractor feature, previously mentioned in connection with the accident, provides that continuous operation which has so much to do with reducing the hauling cost per gallon.

This same procedure becomes an all-important requirement in the bulk haul program. The uninterrupted operation of these trains is a vital and economic factor, greater investment is involved with the attendant interest and depreciation.

Furthermore, one of the great economies realized by this type of operation is the reduction of bulk station transfers by direct service station deliveries. This, in turn, necessitates a dependable service which can be maintained only by close adherence to a schedule. In other words, time out of service must be reduced to an absolute minimum. To accomplish this, the 2500 or 3000-gallon capacity semi-trailer design must be universal in its application to the various heavy duty tractors available. Secondly, the operation of six or more of these trains easily justifies the investment of an extra heavy duty tractor, same to migrate throughout the territory manned by a specialist on this type tractor maintenance.

A service station owned by C. F. Williams & Co. in the residential section of Schenectady, N. Y.

To facilitate the movement of this unit at fairly high speed, light, between locations, two-stage springs and an over-geared transmission would be a practical consideration. The operation of this unit, as described, provides for regular roundhouse inspections and proper field maintenance with no interruption of transportation schedule whatever, also complete insurance against tie-up due to emergency.

Our experience with this type of equipment justifies the mention of several other features as follows:

Handling: This equipment is easy to maneuver in and out of our most inaccessible service stations due to the small turning radius. As a matter of fact, it has been found possible to turn one of these jobs around on a 14-foot road, which is due to the wheelbase of the units used. This type of construction also develops a very low center of gravity, making the equipment very safe to handle at high speed on curves, there being no tendency to sidesway.

Mechanical Flexibility: The feature of this type of equipment is the flexibility provided in all directions by the fifth wheel at a critical point in the construction. One of the serious problems that the operator of the four-wheel tank truck has to contend with is frame breakage. This, in 90 per cent of the cases, has been found to be the result of mounting a tank, a rigid member, on a frame designed to flex under road variation stress. This practice localizes the flexing of the frame at that point between the cab and tank which is eliminated entirely by the tractor-trailer flexibility.

Safety: The tank mounted on a semi-trailer is further removed from the exhaust pipes and other heated surfaces. The outfit is also equipped with six-wheel brakes, the tractor manufacturer providing four-wheel brakes and the trailer being equipped with B. K. Booster brakes operating simultaneously with the tractor brakes, which makes it possible to operate the unit at higher speeds and with increased safety which is not necessary, especially when operating in the congested areas.

Maintenance: The trailer requires very little consideration from the maintenance standpoint. The tractor can be uncoupled from the trailer and run into our shops as a separate unit, thus increasing the productivity of our floor space due to much less area being occupied. Furthermore, the rear axle and brake mechanism are all exposed, materially facilitating brake adjustment, lubrication, etc.

Original Assembly of Units: The possibility of putting this equipment through our shops during the process of original paint and assembly as separate units has very materially facilitated and simplified the shop program. The trailer with tank mounted can be in process of painting and lettering while at the same time the tractor is in the blacksmith shop where cab and fifth wheel are mounted. This, with the fact that these units are numbered separately, makes it possible to hook up a finished tractor with a finished trailer and send it into the territory with the least possible delay.

Initial Cost: It needs little explanation to point out the advantage from this standpoint, the problem being to move a certain gallonage with a limited budget for new motor vehicle equipment. When you take into consideration the fact that we find it possible to increase the capacity 100 gallons at an initial saving of anywhere from $800 to $1,000 per unit as compared with the average two-ton quality truck, the answer is obvious.

In closing I wish to state that all through these specifications we have been careful to avoid anything whatever that might complicate the situation for the manufacturer. In other words, we have endeavored to have this unit just as practical as possible from the production standpoint and also from the operating standpoint in the hope that other companies would find it desirable to use this unit, thereby developing a volume in production that would have a beneficial effect on the cost which obviously has its appeal to the purchaser.

Six-wheel tank truck in service of The Texas Co.

Advantages of Six-Wheel Trucks: Their Application to Hauling

By C. A. Pierce*

(Presented before American Petroleum Institute, Chicago, Dec. 3-5)

ASSUMING that each oil transportation man here present asks the question, "Why should I be interested in six-wheel trucks?" I will first offer in brief an outline of the advantages which this type of vehicle offers and then pass on to a description of a few types which have been built, their advantages and disadvantages.

1. The road laws of many of the largest states have been met in the design of this type of truck and highway engineers have become satisfied that much larger loads can be carried on a six-wheeler than on a four-wheeler without injury to the highway. In Illinois for example, the chief highway engineer stated after several months tests that a gross load of 40,000 pounds could be carried on a six-wheel truck with 16,000 pound load for each of the rear axles without producing any more pavement stresses than produced by a four-wheel truck carrying 16,000 pounds on its rear axle. This limit of 40,000 pounds gross was set on account of the strength of bridges.

2. The six-wheel truck reduces the proportion of dead weight carried. It has been demonstrated that an ordinary four-wheel truck which carries 10,000 pounds weighs about 10,000 pounds, while a six-wheel truck weighing 12,000 pounds carries 16,000 to 18,000 pounds.

3. The six-wheel truck provides a safer means of transportation, especially at the higher speeds now demanded on the open road, on account of:

a. Better traction.
b. Safer against skidding.
c. Better braking ability.

In connection with a and b, I am assuming that both rear axles are positively driven.

4. The six-wheel design accomplishes a more accessible and easier serviced unit than a corresponding four-wheel vehicle of the same capacity. This is made possible by the use of smaller and lighter parts, such as: differential and other axle parts, tires, rims, etc.

5. The modern design of six-wheel unit has a distinct advantage from the standpoint of smooth riding which is reflected in the upkeep of chassis, body and payload.

6. The tire mileage should be much better on a six-wheeler than on a four-wheeler. I quote from a tire expert: "I believe six-wheelers are mechanically less than 100 per cent O.K. until they give this increased mileage." An authority on the western coast states that tire mileage may be doubled by the use of six-wheelers. Up to this time what few records have been kept are either on obsolete types of six-wheelers or over very limited periods of use of the improved six-wheel design. As brought out in a paper by Mr. Sprowls recently at the S.A.E. Transportation Meeting in Toronto, the factors affecting tire mileage are as follows:

1. Load per tire
   a Normal load
   b Abnormal load
   Car-track driving
   Crown of road
   Uneven inflation
   One tire flat
2. Braking
3. Alignment
4. Mechanical conditions.

It will thus be noted that there are many points to be taken into consideration when tire life is being discussed. It is quite apparent that a six-wheel truck which distributes the load evenly between the two rear axles will tend to keep the tires on the ground more of the time, thus reducing the normal load on the tire which is due to bumping action.

On the other hand, it is necessary to check tire diameters and inflation pressures carefully to avoid dragging either the front or rear axle tires. However, in view of the failure of the high pressure tire to meet the increasing demand for heavier loads and higher speeds and the fact that we are passing through a transition period in tire structure and application, I would question any one who states that tire mileage on a six-wheel vehicle is greater or less than on a four-wheel vehicle.

It is certainly true that it is easier to make a good small tire than a good

*Diamond T Motor Car Co., Chicago.

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BENNETT 100 POUND GREASING OUTFIT

The new, improved, watertight, dust-proof Bennett 100 lb. Greasing Outfit possesses real service advantages for the dealer who is interested in speedier grease dispensing. The outfit can easily be handled over dirt and cinders and placed in position for greasing in small and congested places. Typical Bennett Quality Built throughout.

Self-Closing NON-DRIP NOZZLE

New self-closing patented non-drip nozzle with flanges arranged to fit any style transmission. Positive shut-off valve—the only "one-man" nozzle on the market.

BENNETT PUMPS CORP., Muskegon, Mich.
SERVICE STATION EQUIPMENT CO., LTD., Toronto and Winnipeg.
BENNETT EXPORT CORP., 32 Broadway, New York.

Write for Bulletin No. 100!

Investigate the many outstanding features of superiority of this Greasing Outfit before you invest in new greasing equipment.

"Symbol of Quality"

Bennett Pumps Corporation
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FOR OIL MARKETERS
Muskegon, Michigan.

large one and on a four-wheel vehicle a larger tire must be used. A four-wheel vehicle requires a larger tire than a six-wheel vehicle of the same capacity.

7. The six-wheel design lends itself to the production of a better looking transportation unit. This is probably because of the elimination of one single or two single large tires in favor of two smaller single tires or four smaller single tires.

The old design adage, "A machine properly designed looks right" and vice versa, I believe applies in trucks as well as machine tools or pumps or any other mechanical creation. Please do not think that I am underestimating the importance of this consideration because I have placed it last in the list of advantages. I am firmly convinced that modern business management demands that the company equipment shall properly advertise their product. And how can the same amount of money be spent more effectively for advertising purposes than by the employment of good looking trucks.

The well designed six-wheeler should have the following characteristics, at least, possibly many others:

1. The two rear axles should be connected together in such a way that there is an equal distribution of weight on all of the rear tires. The object of this is to secure similar size tires all around, to secure equal tractive effort on the two rear axles and thereby accomplishing the use of two axles of equal design. It will be recalled that in the early days, dead axles were used to carry an unequal portion of the load.

2. The axles should be so mounted that considerable flexibility is permitted without undue distortion of frame, springs and other connecting parts. On the other hand, the flexibility must not be carried so far as to cause interference of tires with shackles, springs, hangers or other parts of the mechanism. It may be pointed out that this is not easy to accomplish in a chassis where dual tires are used under each of the rear axles, on account of the overall 96-inch limit for vehicles on the road. And I may add that it has not been made easier by the recent actions of the Tire and Rim Association in their spacing of the new medium pressure tires.

The word *flexibility* may be used in several senses; flexibility to the demands of the mechanism of the vehicle itself, such as: torque flexibility, and flexibility of the vehicle itself to the uneven road conditions often encountered.

A common test of a six-wheeler is to raise one of the four rear wheels from 8 to 10 inches in the air and note the condition of the other three, whether or not they are on the ground, also to note mechanical interferences. One is surprised to see how little the load is distorted from its normal position in a test of this kind with a well designed six-wheeler.

The question of torque flexibility or ability of the axles to roll fore and aft with the application of power or brake many consider quite important. If two small axles are used in place of one large one, it is quite important that each take its share of the torque load. If some means can be provided to allow the forward axle to momentarily shrug until the rear axle has time to share the load, it is believed that there will be less chance of squeezing out of the oil film and ruining one axle.

3. Among other problems is the one of springs and spring mounting. A very rigid spring may be used because great flexibility is not necessary to secure good riding qualities in this type of design. The type of spring using two hangers on the frame seems best from the standpoint of load distribution on frame side members. The frame design often presents a serious problem on account of the flexibility of the two rear axles; universal joints also must at times work with greater angularity than is common in the four-wheel construction.

4. The powering of a six-wheel unit presents a very little different problem from that of the standard four-wheel construction. If an engine of sufficient size is provided to meet the speed demands of the road it will have sufficient torque to meet all ordinary pulling demands. However, frequent applications of four-wheel trailers to the six-wheelers are made—one and sometimes two trailers are hauled behind the six-wheel unit. For such applications, larger motors are required.

5. Many of the early six-wheelers used mechanical brakes. It was very difficult to design mechanism for the control of these brakes if the axle mounting design had the proper flexibility. The result was worse than some of the early Hotchkiss drive brake design failures. Some of the tire records which have been published and which show little advantage, if any, in tire life of the six-wheeler over the four-wheeler were doubtless made on six-wheelers with improper brake hook-up. The perfecting of the hydraulic and air brake which are controlled through flexible tubes has solved the problem of satisfactory brake design on six-wheelers.

6. The question of a third differential which would allow relative motion between the driving members of the two axles has been discussed pro and con since the present type of six-wheeler made its appearance. The tire manufacturers would like to see either a third differential or one driving axle used. Most of the reasons they give for this choice in con-

struction are theoretical although, it must be admitted that if tires of different diameters are used on the rear axles, there must be a slipping and rapid wear of tires.

There are however, two major objections to the use of a third differential. The first is that no one, as far as I know, has built a successful one and I am advised by experts on this matter that it is not easy to build one. It is a high speed differential, must be put in a limited space and properly lubricated. The second objection to the use of the third differential is, of course, the loss of traction which will result when one wheel loses contact with the road and starts spinning. It is most desirable to have equal distribution of driving torque between all four wheels under normal conditions.

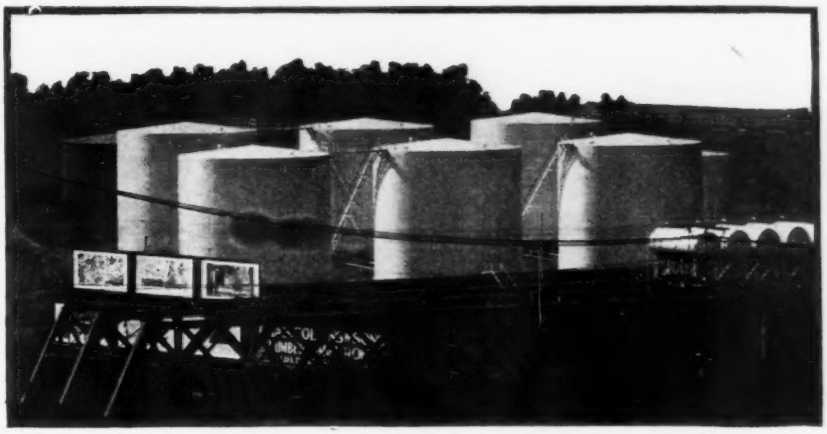
Cut Off Electric Power

CHICAGO—Oil marketing companies using electric power at unloading tracks should be careful to cut power off the lines while a tankcar is being unloaded as a fire prevention caution and to protect workers against electrocution, according to the October news letter of the Atlantic division of the National Safety Council, Chicago.

A fatal accident was reported recently when a young man coming into contact with an overhead power line while he was loosening a manhole cover on a tank car.

The letter points out a rule for safe unloading of gasoline tank cars which requires that the trolley or third rail switches should be locked open except when moving cars, in the event electric locomotives are used.

C. B. Edwards of the Lufkin Foundry & Machine Co., represents this East Texas manufacturing firm in Gulf Coastal territory. He is widely known for his golf prowess



Unretouched photo of six 15,000-barrel furnace oil tanks built for the North End Auto Supply at Troy, N. Y.

Make More Money with Field Erected Storage Tanks

The marketer who makes money is the one who supplies his customers from storage tanks during the busy season. Prices usually increase then, making it possible to realize an extra profit on oil put in storage when prices were lower.

For instance, the six tanks illustrated above have a capacity of 90,000 barrels. If the furnace oil market is only as good as it was last year, every barrel is worth 20 to 50 cents more when sold than when put in storage last summer.

Similarly, the refinery price of gasoline advances as much as 2 cents per gallon during the busy mid-summer season over winter prices. At this rate, a storage tank soon pays for itself and nets a handsome profit besides.

Flat-bottom field-erected tanks provide storage at a minimum cost. Let us quote you on installations ranging from 25,000 gallons up, to take advantage of price increases. Write our nearest office stating number and capacity of tanks.

CHICAGO BRIDGE & IRON WORKS

Chicago.....2125 Old Colony Bldg.
New York.3145 Hudson Terminal Bldg.
Cleveland.....2206 Union Trust Bldg.
Boston....1516 Consolidated Gas Bldg.
Dallas.....3339 Magnolia Bldg.
Atlanta.....1050 Healey Bldg.
San Francisco.....1060 Rialto Bldg.
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The OIL PRICE HANDBOOK is the only complete record of oil markets for a whole year, compiled in one handy volume for quick reference. Cloth bound—marginal index—9" x 6"—146 pages.

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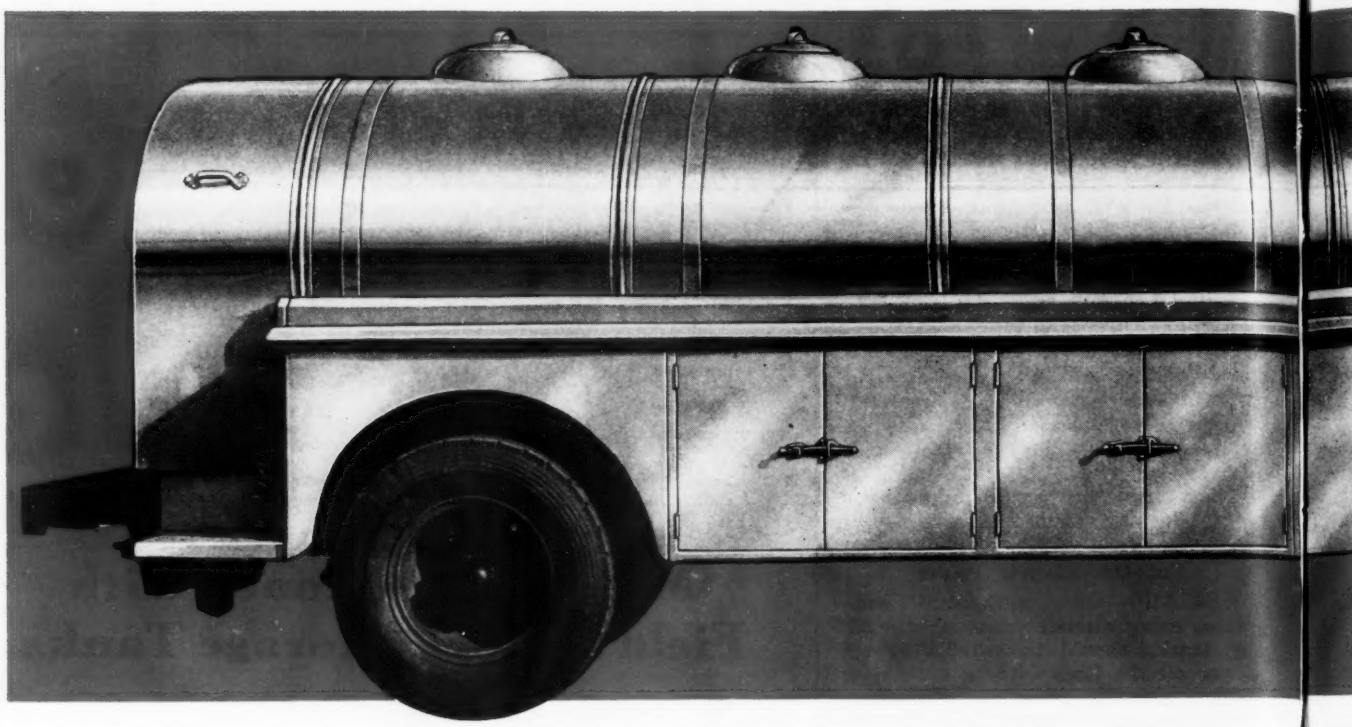
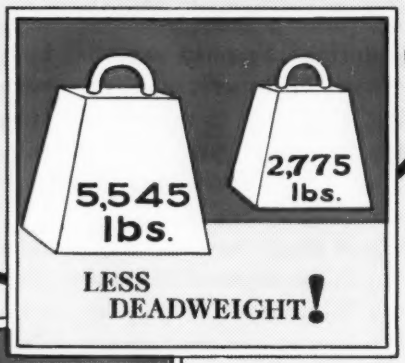
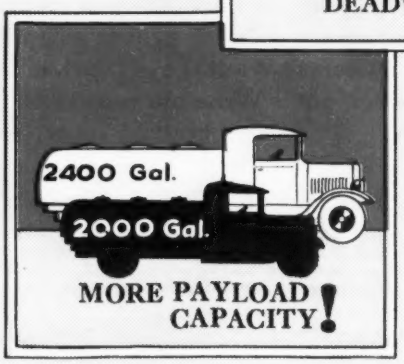






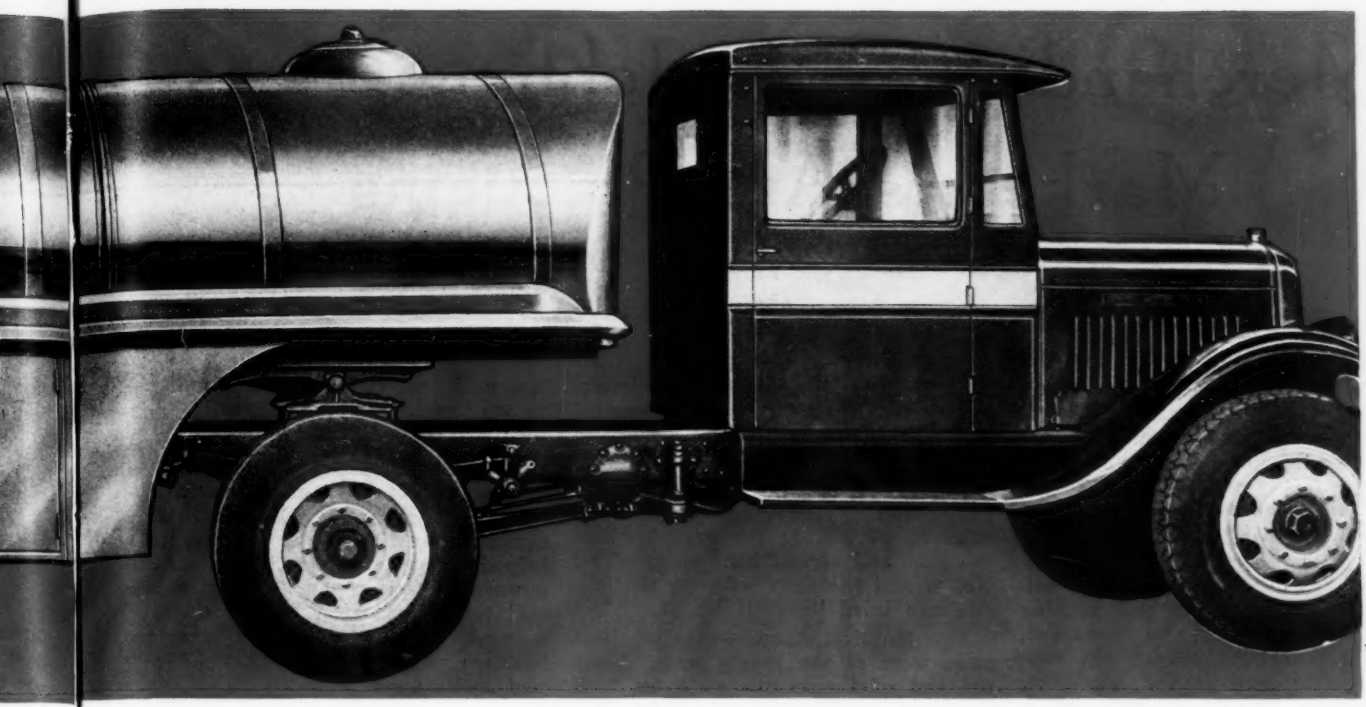
The NEW

5 Unanswerable Arguments for STANDARD Aluminum Truck Tanks!

1. 50% Less Deadweight
2. 20% More Payload Capacity
3. Non-Corrosive, Last Indefinitely
4. Reflect Heat, Lessening Evaporation Losse
5. Higher Salvage Value

TRUCK TANKS, ALL SIZES AND DESIGNS—BOTH STEEL AND ALUMINU TR

Standard Steel Works North Kansas City, Mo.



ALL-ALUMINUM
Standard Truck Tank!

HERE you have ***the world's first all-aluminum truck tank***—designed and built by STANDARD STEEL WORKS engineers!

In constructing this remarkable all-aluminum truck tank the STANDARD STEEL WORKS has solved the problem of obtaining the greatest possible payload per truck tank with the least possible deadweight of construction. Note the following comparison between a steel tank and an all-aluminum tank having approximately the same gross weight:

STEEL TANK		ALUMINUM TANK	
2000 gal. steel tank -	5545 lbs.	2400 gal. aluminum tank -	2775 lbs.
2000 gal. gasoline -	13200 lbs.	2400 gal. gasoline - -	15840 lbs.
Drop frame semi-trailer and 5th wheel	5300 lbs.	Drop frame semi-trailer and 5th wheel	5300 lbs.
Gross weight - -	24045 lbs.	Gross weight - -	23915 lbs.

Most states have stringent road laws which prohibit the use of large capacity steel truck tanks. All-aluminum construction overcomes this difficulty. Aluminum is non-corrosive—lasts indefinitely even when handling products of high corrosive acid content. And should an aluminum tank become obsolete for any reason, the metal has a ready resale value at attractive prices.

The first all-aluminum truck tank pictured above was on display at the International Petroleum Exhibition at Tulsa and has been purchased by the Texas Company.

Other manufacturers will follow this new and revolutionary all-aluminum principle in the near future. But you can get it now from its originators—The STANDARD STEEL WORKS!

TRUCK TANKS, ALL SIZES AND DESIGNS—BOTH STEEL AND ALUMINUM

Standard Steel Works North Kansas City, Mo.

Merchandising and Jobbing Ideas Marketers Are Practicing

By E. L. Barringer
N. P. N. STAFF WRITER

SERVICE that is service because intelligent men will be working at service stations, probably is the next development in the marketing division of our industry, thinks J. D. Haire, general manager of the Akron Oil Co., Akron, O.

High caliber men, both as to intellect and financial return, are employed in the producing and refining end of the industry, he remarked, while the marketing branch has been slighted. He believes the marketing end is about due for a more intelligent set up.

* * *

Education in Selling for Station Salesman

Right along this line comes the report that the Tide Water Oil Co. is arranging a correspondence course for men who sell its Veedol motor oil and other products. The course, given through LaSalle Extension university, is to educate service station attendants in salesmanship as well as on the products they sell.

The attendants will receive a set of text books and take written examinations. These examination papers will be graded, and with a brief summary of the attendant's ability, will be sent to the oil company.

Cost of the course is $15, paid by the attendant. At the completion of the course $7.50 will be refunded by the oil company. If the attendant continues with the company for six months to a year the balance will be returned.

The course can be completed in about three months.

* * *

This Man's Oil Sales Reach Peak in Winter

A word would be in order at this season concerning a large Independent marketer in northern Ohio who sells more motor oil in winter than in summer. In fact January is the peak month; November is the second best month.

This marketer graphed his 1928 motor oil sales. The first index line above the bottom of the graph represented total sales of the company's own brand of motor oil by months. This oil we will designate as oil No. 1. A second index line represented monthly sales of a nationally advertised oil, which we will designate as oil No. 2. A top line represented sales of a second nationally advertised oil, to be known as oil No. 3.

The area between the bottom of the graph and the first line represented sales of oil No. 1; the area between the first and second lines sales of oil No. 2, and the area between the second and third lines oil No. 3.

For the first three weeks of 1928 sales were at the year's peak. Near the end of the month all sales took a sharp drop and fell to a low for the year in February. This valley is attributed in part to the shortness of the month. Books are closed three days before the first of each month, so February, 1928, had only 26 business days.

From February the line of total sales ran to another peak for July, declined in the fall months, and rose to a second high peak in November. December was a good month, but below November.

About three years ago this company decided to supplement its own oils with nationally advertised brands. There was some anxiety as to what might happen to its own oils. The chart of 1928 sales showed a substantial gain in sales of its own brand over 1926 sales. This oil followed the general trend in 1928, but sales did not fall rapidly in the fall, and November was the peak month.

Oil No. 3 is a low cold test product. In January its sale represented 59 per cent of the total business. Getting into the spring sales of this oil slackened, but sales began to climb in the fall. This oil, with the company's own brand, was responsible for the secondary peak of November.

Oil No. 2 started the year with relatively small sales and advanced steadily until it reached its peak in July, then declined in the fall. This oil made up the major portion of the business over the year. In July this oil was at its peak, while sales of oil No. 3 were negligible. But in the winter, when oil No. 2 was low in sales, oil No. 3 was carrying the business.

An official of the company in going over his accounts found many customers using oil No. 3 in the winter and changing over to oil No. 2 in the summer. The large sales of the low cold test oil No. 3 is attributed to an intelligent job of selling on the part of the manufacturer.

Apparently the chart indicates the advisability of carrying a nationally advertised oil. And it proves, in this company's case, that the national lines helped sales of the local brand. Also, a warm reception can be given a low cold test oil when it carries sales to a peak in January when gasoline business is slumping. That 59 per cent looks big.

* * *

Roadside Advertising That Misses Its Mark

Another paragraph can be added to the article published in NATIONAL PETROLEUM NEWS of Oct. 30, page 288, about sign displays along the highway and at service stations. Along a busy main highway between two fair sized cities in Ohio is a billboard inviting purchases of gasoline and motor oil at the next station ahead on the right. In big letters at the bottom is a line announcing that products of one of the largest distributors in the state are sold.

About 500 feet farther on is the station - - - closed. The door is locked, grass is in the drive and the pumps look forlorn.

Within another 500 feet is another station, freshly painted with a large sign plainly visible down the road from where a motorist may have been stopped, by the billboard, at the deserted station.

* * *

One-Stops Affect Other Stations but Little

Canton, O., may well lay claim to the "world's first" when it comes to counting up one-stop service stations. An ordinary service station looks lost among the city's many super-stations. Tire companies from Akron have helped to build ornate palaces to one-stop service, and some oil companies have helped the cause.

In the worst dull season in recent times only eight service stations were closed. At present only three stations are idle. Putting two and two together indicates that the one-stop stations have not absorbed much gallonage of previous outlets.

Refinery Output of Gasoline Speeds Up While Demand Drops

By J. C. Chatfield
N. P. N. STAFF WRITER

CLEVELAND

THE necessity for a prompt and substantial reduction in refining operations over the coming months is revealed by the latest reports of the U. S. Bureau of Mines.

Production of gasoline in the U. S. rose to a new peak in the history of our industry in October.

The new record in production came at the opening of the dull season and in the face of a sharp decline in domestic demand.

Stocks of finished gasoline increased at a faster rate during the month than in any October in recent years.

While the refining branch of our industry was running at top speed, the producing division was setting its house in order in preparation for the dull season. Production of crude oil was lower than at any time since mid-year and stocks increased only slightly.

The history of our industry has been that the measure of profits gained in any year is largely controlled by conditions prevailing in the early part of the year. In years when refiners build up large reserve stocks of finished products in the winter and early spring months prices generally drop to such low levels that losses are experienced on gasoline sales later in the year.

Formerly there was a great deal of talk about stocks being in "strong hands" and hence not constituting a menace to markets. Lately there has not been so much of this sort of talk. It has been recognized that finished products must and will find a market at some price.

The history of our industry has shown that, when refiners as a whole keep their runs low in the winter and early spring, profitable summer operations are a result. If our industry could bring itself to under-estimate its probable future market it would do much better on the entire year's operations.

As the new year approaches economists of our industry have been studying factors affecting the gasoline business in an effort to forecast domestic demand for next year. At the meeting of the American Petroleum Institute at Chicago a group of statisticians compared notes on their forecasts. An average of their opinions was that domestic gasoline demand in 1930 will exceed that of 1929 by 8.43 per cent. The highest estimate was 10 per cent and the lowest 7.5 per cent.

The official publication of the Standard Oil Co. of New Jersey, The Lamp, in its current issue discusses the danger in the present situation in an article titled "What of 1930?" Following is the article:

"The petroleum industry is now entering its regular period of accumulation of finished products, particularly gasoline. If recent history is to be repeated, this accumulation will be excessive. In a sort of blind confidence that there will be a market

Crude Oil Imports — Barrels

Origin	October Daily Avg.	September Daily Avg.	Jan.-Oct. 1929 Total	Jan.-Oct. 1928 Total	Per cent change 1929 over 1928
Mexico	33,700	53,500	11,243,000	14,331,000	—21.55
Venezuela	97,500	146,500	44,269,000	38,932,000	+13.71
Colombia	51,300	28,200	10,504,000	10,287,000	+ 2.11
Other Countries	3,500	3,600	2,477,000	2,502,000	— 1.00
Total	186,000	231,800	68,493,000	66,052,000	+ 3.70

Crude Oil Exports — Barrels

Destination	October Daily Avg.	September Daily Avg.	Jan.-Oct. 1929 Total	Jan.-Oct. 1928 Total	Per cent change 1929 over 1928
Canada	78,300	59,400	18,370,000	12,803,000	+43.48
Other Countries	14,200	6,900	3,328,000	2,938,000	+13.27
Shipments	.....	.....	7,000	4,000	+75.00
Total	92,500	66,300	21,705,000	15,745,000	+37.85

Petroleum Supply and Demand — Barrels

	October 1929	September 1929	August 1929	July 1929	June 1929	October 1928	Jan.-Oct. 1929	Jan.-Oct. 1928
Domestic Crude Production: Light	88,104,000	87,269,000	92,288,000	91,327,000	83,403,000	79,751,000	847,103,000	745,858,000
Imports of crude oil	5,766,000	6,953,000	5,800,000	6,122,000	6,591,000	6,703,000	68,493,000	66,052,000
Imports of refined oil	3,642,000	2,725,000	3,429,000	3,176,000	2,426,000	771,000	24,045,000	10,066,000
Natural gasoline produced	4,912,000	4,574,000	4,507,000	4,417,000	4,250,000	3,731,000	43,310,000	34,628,000
Benzol used in blending	264,000	253,000	264,000	264,000	257,000	245,000	2,571,000	2,317,000
Total new supply of all oils	102,688,000	101,774,000	106,288,000	105,306,000	96,927,000	91,201,000	985,522,000	858,921,000
Total stocks end of preceding month	677,421,000	672,066,000	666,962,000	660,425,000	653,529,000	613,919,000	613,483,000	589,607,000
Total supply of all oils	780,109,000	773,840,000	773,250,000	765,731,000	750,456,000	705,120,000	1,599,005,000	1,448,528,000
Exports of crude oil	2,869,000	1,988,000	2,236,000	3,117,000	2,615,000	2,015,000	21,705,000	15,746,000
Exports of refined oil	13,940,000	8,555,000	12,621,000	12,358,000	12,383,000	10,271,000	113,163,000	114,745,000
Domestic demand, crude and refined	82,510,000	85,876,000	86,327,000	83,294,000	76,425,000	78,876,000	783,068,000	711,615,000
Total demand	99,319,000	96,419,000	101,184,000	98,769,000	91,423,000	91,162,000	917,936,000	842,106,000
Total stocks of all oils end of month	680,790,000	677,421,000	672,066,000	666,962,000	660,425,000	613,958,000	680,790,000	613,958,000
Days' supply	212.4	210.7	205.9	209.3	216.7	208.7	224.4	221.3
Increase in stocks of all oils	3,369,000	5,355,000	5,104,000	6,537,000	5,504,000	39,000	67,586,000	16,815,000
Daily average new supply	3,313,000	3,392,000	3,429,000	3,397,000	3,231,000	2,942,000	3,242,000	2,816,000
Daily average demand	3,204,000	3,214,000	3,264,000	3,186,000	3,047,000	2,941,000	3,020,000	2,761,000
Daily average excess of supply over domestic demand	347,000	207,000	346,000	410,000	382,000	157,000	361,000	234,000
Crude stocks east of Calif.	384,502,000	386,662,000	386,677,000	383,343,000	379,089,000	374,640,000	384,502,000	374,640,000
In California	153,117,000	150,443,000	146,047,000	140,076,000	136,327,000	113,709,000	153,117,000	113,709,000
Total stocks of crude	537,619,000	537,105,000	532,724,000	523,419,000	515,416,000	488,349,000	537,619,000	488,349,000
Total stocks of refined	142,681,000	139,655,000	138,449,000	142,387,000	143,653,000	125,207,000	142,681,000	125,207,000
Total stocks of natural gasoline	490,000	661,000	893,000	1,156,000	1,356,000	402,000	490,000	402,000

Crude Oil Production by States and Fields — Barrels

	October 1929 Daily Avg.	September 1929 Daily Avg.	October 1928 Daily Avg.	Jan.-Oct. 1929 Total	Jan.-Oct. 1928 Total	1929 Change Over 1928
California	867,700	870,100	626,800	249,019,000	190,434,000	+30.76
Gulf Coast Louisiana	22,400	21,200	17,900	6,041,000	5,854,000	+ 3.19
Gulf Coast Texas	145,600	134,100	109,700	39,028,000	32,822,000	+18.91
Total Gulf Coast	168,000	155,300	127,600	45,069,000	38,676,000	+16.53
Total Coastal	1,035,700	1,025,400	754,400	294,088,000	229,110,000	+28.36
Colorado	5,400	6,100	7,400	1,981,000	2,340,000	—15.34
Montana	8,400	8,500	9,300	2,703,000	3,349,000	—19.29
New Mexico	7,800	7,200	2,900	1,203,000	748,000	+60.83
Wyoming	53,800	55,500	63,200	16,003,000	18,105,000	—11.61
Total Rocky Mount.	75,400	77,300	82,800	21,890,000	*24,548,000	—10.83
Arkansas	63,600	65,100	86,700	21,395,000	26,952,000	—20.62
Kansas	118,600	132,000	96,800	35,965,000	32,801,000	+ 9.65
Oklahoma	666,700	712,400	771,800	214,459,000	205,057,000	+ 4.59
North Louisiana	38,700	38,100	37,600	10,758,000	12,560,000	—14.35
Inland Texas	698,700	722,800	623,000	209,768,000	180,793,000	+16.03
Total Southwestern	1,586,300	1,670,400	1,615,900	492,345,000	458,163,000	+ 7.46
Illinois	18,200	17,700	18,000	5,308,000	5,440,000	— 2.43
Indiana	2,600	2,500	3,100	812,000	864,000	— 6.02
Ohio	19,300	18,000	19,400	5,634,000	5,955,000	— 5.39
Kentukcy	26,100	24,100	21,200	6,340,000	6,154,000	+ 3.02
Pennsylvania	36,200	32,000	28,300	9,642,000	8,278,000	+16.48
West Virginia	16,500	15,200	16,500	4,670,000	4,783,000	— 2.36
New York	9,300	9,400	7,600	2,767,000	2,087,000	+32.58
Michigan	16,300	17,000	2,400	3,589,000	435,000	+725.06
Tennessee	100	.....	100	18,000	41,000	—56.10
Total Eastern	144,600	135,900	116,600	38,780,000	34,037,000	+13.93
GRAND TOTAL U. S.	2,842,000	2,909,000	2,569,700	847,103,000	745,858,000	+13.57

*Includes 6,000 barrels for Alaska and Utah.

Stocks of Crude Oil

Domestic Unless Otherwise Specified. Amounts in Thousands of Barrels at Refineries

	Oct., 1929	Sept., 1929	Oct., 1928
East Coast:			
Domestic	8,940	8,899	8,235
Foreign	4,067	3,748	3,686
Appalachian	2,830	2,803	2,131
Indiana, Illinois, etc.	2,859	2,809	2,931
Oklahoma, Kansas, etc.	5,305	5,369	5,329
Texas Inland	1,798	1,745	1,712
Texas Gulf Coast:			
Domestic	10,144	10,438	7,663
Foreign	615	557	158
Ark. and Inland La.	1,183	1,347	936
Louisiana Gulf Coast:			
Domestic	4,122	4,384	4,220
Foreign	1,574	1,663	1,031
Rocky Mountain	1,426	1,343	1,774
U. S. East of Calif	44,863	45,105	39,806
AT TANK FARMS, IN PIPE LINES AND ELSEWHERE THAN REFINERIES (Reported by Field of Origin)			
Appalachian	4,572	4,555	5,270
Kentucky	805	764	834
Lima-Indiana	470	529	1,335
Ill., S. W. Indiana	10,363	10,302	11,440
Okla., Kans., Tex., except coastal	256,147	257,611	238,241
N. La.-Ark.	21,762	22,252	26,072
Gulf Coast	20,684	20,637	18,753
Rocky Mountain	24,721	24,791	25,991
East of Calif., pipe line and tank farm stocks	339,524	341,441	327,936
Foreign Crude:			
Atlantic ports	71	45	52
Gulf ports	44	71	155
Total refinery, pipe line and tank farm stocks east of Calif.	384,502	386,662	367,949
California:			
20° and lighter	42,041	40,433	16,684
Heavier than 20°	111,076	110,010	97,025
GRAND TOTAL	537,619	537,105	481,658
CLASSIFICATION BY GRAVITY (East of California)			
24° and lighter	344,181	345,673	319,221
Heavier than 24°	40,321	40,989	48,728
PRODUCERS' STOCKS (Approximate)			
East of Calif.	6,250	6,450	6,691
California	694	316	*

*Not available.

for the products, that each company will secure a portion of the business of the others, the individual units, large and small, will set in motion a sequence of events that will bring about a repetition of unsatisfactory results.

"If the units of the refining industry adopt a conservative attitude in their estimates of the prospective increase in markets until such time as the peak demand materializes, crude producers will not be encouraged to add to an excess of supply. Voluntary proration will then become of benefit to the industry and public alike with no other results than that the costly reserves of crude and products above ground will be reduced.

"But let us look at the other side of the picture: If the United States continues in 1930 to produce and import crude on present schedules, part of it must be stored during the first half of the year unless the refineries insist on carrying it in the form of products at the risk of price reductions.

"During the latter six months, at present rate of production, stocks of both crude and products will be reduced, provided there is an increase in consumption of more than three per cent, but the reduction will hardly exceed the amount stored during the first six months.

"Manufacturing too much gasoline in the early few months has often cost refiners a profitable year's business. They are now going at almost top speed in spite of the fact that in 1929 the country added to gasoline stocks 7,000,000 or 8,000,000 barrels after caring for a consumption gain that greatly exceeded all early expectations.

"The industry enters 1930 with a very large increase in stocks. No oil man acquainted with recent developments is optimistic enough to expect in 1930 anything like the gain in gasoline consumption experienced in the last two or three years, particularly in 1929.

"Stocks of crude and products have been excessive for several years. At the end of 1929 they are larger than ever, since something like 70,000,000 barrels were added to the 620,000,000 barrels above ground at the beginning of the year.

"The worst mistake that can be

Runs to Stills — Barrels — Daily Average

Districts	CRUDE OIL October 1929	CRUDE OIL September 1929	UNFINISHED OIL October 1929	UNFINISHED OIL September 1929	NATURAL GASOLINE October 1929	NATURAL GASOLINE September 1929	TOTAL INPUT October 1929	TOTAL INPUT September 1929
Texas Gulf Coast: Domestic	457,226	440,533	18,290	24,000	29,323	27,067	504,839	491,600
Foreign	4,451	3,733	.....	.....	.....	.....	4,451	3,733
Louisiana Gulf Coast: Domestic	127,258	114,766	194	1,833	15,387	13,000	142,839	129,600
Foreign	9,581	12,800	.....	.....	.....	.....	9,581	12,800
Total Gulf Coast	598,516	571,832	18,484	25,833	44,710	40,067	661,710	637,733
East Coast: Domestic	313,484	302,633	42,710	30,267	5,290	4,400	361,484	337,300
Foreign	168,806	183,166	.....	.....	.....	.....	168,806	183,166
Total East Coast	482,290	485,799	42,710	30,267	5,290	4,400	530,290	520,466
California	732,548	698,667	8,742	13,167	54,581	53,900	795,871	765,733
Total Tide Water	1,813,354	1,756,298	69,936	69,267	104,581	98,367	1,987,871	1,923,932
Appalachian	96,065	92,367	4,323	3,867	1,774	1,700	102,161	97,933
Ind., Ill., Ky	317,323	318,667	27,645	23,600	11,677	6,700	356,645	348,967
Total East Central	413,388	411,034	31,968	27,467	13,451	8,400	458,806	446,900
Oklahoma, Kans., Mo	321,355	328,500	11,452	17,733	13,871	12,900	346,677	359,133
Inland Texas	162,871	158,667	3,161	4,533	7,548	7,200	173,581	170,400
No. La. and Ark	71,323	77,100	8,968	1,200	4,935	5,133	85,226	83,433
Total Southwestern	555,549	564,267	23,581	23,466	26,354	25,233	605,484	612,966
Rocky Mountain	69,000	71,700	17,742	18,733	4,290	4,600	91,032	95,033
Total Inland	1,037,937	1,047,001	73,291	69,666	44,095	38,233	1,155,322	1,154,899
TOTAL UNITED STATES	2,851,291	2,803,299	143,227	138,933	148,676	136,600	3,143,193	3,078,831

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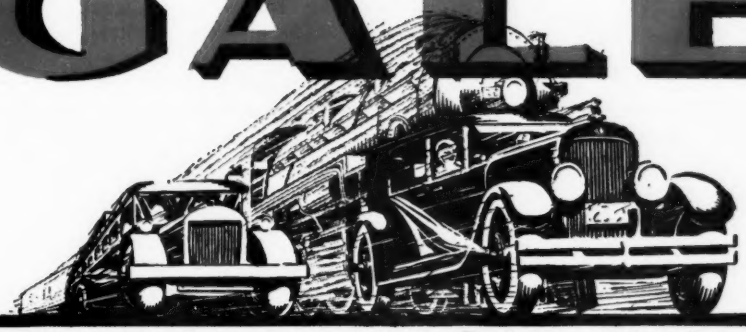

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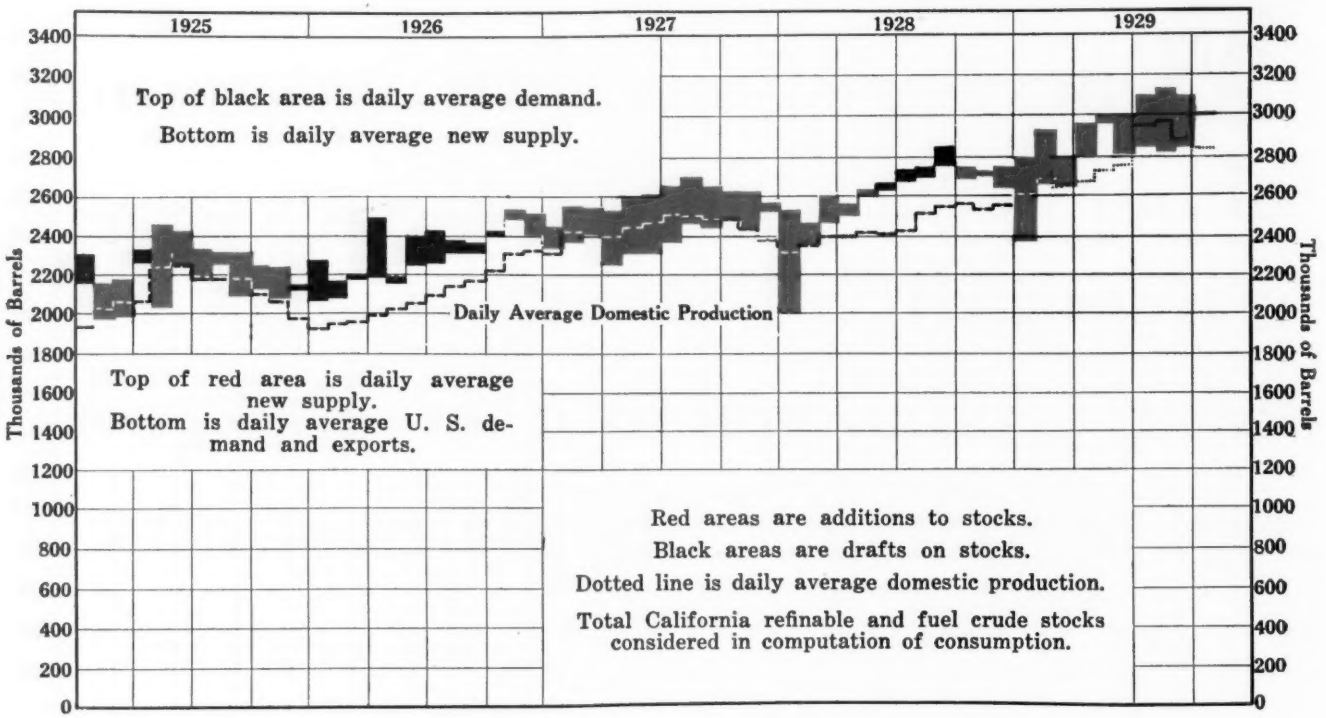
Crude Oil Production and Demand



October domestic production	2,842,000 Bbls. daily av.	
October imports	186,000 Bbls. daily av.	
Total new supply	3,028,000	
October total indicated demand east of Calif.	2,158,400 Bbls. daily av.	
October indicated demand in Calif.	760,100 Bbls. daily av.	
October exports	93,000 Bbls. daily av.	
Total indicated demand	3,011,500 Bbls. daily av.	
Stock at refineries east of Calif. Oct. 31, 1929	44,863,000 Bbls.	

Stocks in pipe lines and at tank farms east of Calif.	384,502,000 Bbls.
Stocks of light Calif. crude	42,041,000 Bbls.
Stocks of heavy Calif. crude	111,076,000 Bbls.
Stocks of foreign crude not at refineries	115,000 Bbls.
*Total stocks of crude	537,619,000 Bbls.
Increase in stocks in October	514,000 Bbls.
Stocks October 31, 1928	488,349,000 Bbls.

*Exclusive of stocks held by producers which amounted to 6,944,000 barrels.

made is the assumption that the cure for all evils has been effected through the curtailment of crude production. Unfortunately, that is only half the remedy and the most important part is to see that runs of crude to refineries are reduced to the point where there is no undue increase in stocks of products.

"The most healthful thing that could happen to the industry today in the absence of greater consumption would be the decision of each and every refiner in the country to do his share in an honest effort to prevent any increase in stocks of products in his district. As refiners increased their stocks of products and partly finished oils by 30,000,000 barrels in 1929, it is not difficult to see what a small increase in refinery output is necessary in 1930 to avoid adding further to stocks."

Executives in all lines of business are taking stock of the present situation in an effort to forecast what may be expected in 1930. In Cleveland the Chamber of Commerce held a luncheon this week with Col. Leonard P. Ayres, vice president of the Cleveland Trust Co. and a nationally known business analyst, as principal speaker. The hotel was so jammed with men who wanted to hear about next year that loud speakers had to be put up in the lobby and a number of small rooms.

Colonel Ayres showed that there has been a serious business depression following 12 out of 13 stock market crashes of the past 50 years. In each of those cases the crash was brought on by speculation, rising commodity prices, overemployment of labor, overordering, overproduction and the building up of inventories. In addition the crashes were marked by failure of important brokerage houses and financial institutions.

"This time," he said, "We have no competition for labor, no advance in commodity prices, no scarcity of business credit, no building up of inven-

Gasoline Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1928	27,981,000	562,000	3,713,000	20,778,000	37,368,000
February	26,856,000	372,000	3,341,000	21,402,000	39,853,000
March	29,276,000	259,000	4,016,000	24,294,000	41,078,000
April	29,317,000	472,000	4,111,000	25,567,000	41,189,000
May	30,825,000	368,000	5,812,000	28,346,000	38,224,000
June	30,703,000	212,000	4,808,000	29,469,000	34,862,000
July	32,974,000	267,000	5,167,000	32,542,000	30,394,000
August	34,101,000	479,000	4,563,000	33,336,000	27,075,000
September	33,669,000	193,000	4,837,000	29,722,000	26,378,000
October	34,403,000	388,000	4,049,000	30,680,000	26,440,000
Total Ten Months	309,934,000	3,572,000	44,417,000	276,136,000	26,440,000
November	33,171,000	304,000	4,678,000	26,052,000	29,185,000
December	33,907,000	420,000	3,802,000	26,644,000	33,066,000
1928 Total	377,183,000	4,296,000	52,897,000	328,832,000	33,066,000
January, 1929	34,335,000	499,000	4,650,000	22,602,000	40,648,000
February	31,264,000	406,000	3,838,000	22,776,000	45,704,000
March	34,467,000	327,000	4,798,000	27,495,000	48,205,000
April	34,636,000	822,000	4,629,000	32,019,000	47,015,000
May	36,270,000	729,000	5,249,000	34,117,000	44,648,000
June	35,606,000	732,000	5,832,000	*33,163,000	*41,991,000
July	37,855,000	934,000	6,040,000	36,860,000	37,880,000
August	38,510,000	792,000	5,635,000	37,759,000	33,788,000
September	37,152,000	901,000	4,426,000	34,193,000	33,222,000
October	39,663,000	1,026,000	6,053,000	32,816,000	35,042,000
Total Ten Months	359,758,000	7,168,000	51,150,000	313,800,000	35,042,000
Change This Year Over Like Period Last Year	+49,824,000	+3,596,000	+6,733,000	+37,664,000	+8,602,000
Per Cent	+16.07	+100.67	+15.16	+13.64	+32.53

*Revised.

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REFINERIES: Franklin, Pa. and Petrolia, Pa.

Gasoline Situation by Districts — Barrels

Districts	October Daily Avg. Output	Sept. 1929 Daily Avg. Output	October Change %	October Daily Avg. Shipments	September Daily Avg. Shipments	October Change %	Stocks October 1929	Stocks September 1929	Stocks October 1928	Districts
Gulf Coast Texas...	220,290	205,267	+ 7.32	192,484	198,167	— 2.87	3,982,000	3,120,000	3,330,000	...Gulf Coast Texas
Gulf Coast Louis...	65,258	60,600	+ 7.69	68,548	62,267	+10.09	1,295,000	1,397,000	1,515,000	..Gulf Coast Louis,
Total Gulf.....	285,548	265,867	+ 7.40	261,032	260,434	+ 0.23	5,277,000	4,517,000	4,845,000	.....Total Gulf
East Coast.....	167,710	164,800	+ 1.77	154,806	173,800	—10.93	4,512,000	4,112,000	4,578,000	.....East Coast
California.....	280,258	264,900	+ 5.80	244,548	256,833	— 4.78	14,225,000	13,118,000	8,713,000	..... California
Total Coastal....	733,516	695,567	+ 5.46	660,386	691,067	— 4.44	24,014,000	21,747,000	18,136,000	....Total Coastal
Appalachian.....	45,323	43,367	+ 4.51	47,613	43,033	+10.64	995,000	1,066,000	810,000	.....Appalachian
Ind., Ill., Ky., etc...	188,806	188,300	+ 0.27	190,161	201,800	— 5.77	4,333,000	4,375,000	3,648,000	..Ind., Ill., Ky., etc.
Total East Cent..	234,129	231,667	+ 1.06	237,774	244,833	— 2.88	5,328,000	5,441,000	4,458,000	Total East Cent.
Okla., Kans., Mo...	175,323	176,533	— 0.69	180,323	187,200	— 3.67	2,782,000	2,937,000	2,120,000	..Okla., Kans., Mo.
Inland Texas.....	66,935	63,600	+ 5.24	69,161	63,267	+ 9.32	898,000	967,000	657,000	.....Inland Texas
No. La. and Ark....	25,516	24,200	+ 5.44	25,000	25,100	— 0.40	303,000	287,000	154,000	..No. La. and Ark.
Total Southwest..	267,774	264,333	+ 1.30	274,484	275,567	— 0.39	3,983,000	4,191,000	2,931,000	Total Southwest
Rocky Mountain...	44,032	46,833	— 5.98	48,097	45,800	+ 5.02	1,717,000	1,843,000	928,000	..Rocky Mountain
Total Inland.....	545,935	542,833	+ 0.57	560,355	566,200	— 1.03	11,028,000	11,475,000	8,317,000	....Total Inland
TOTAL U. S.....	1,279,451	1,238,400	+ 3.31	1,220,741	1,257,267	— 2.90	35,042,000	33,222,000	26,453,000	...TOTAL U. S.
Imports.....	33,097	30,033	+10.20	.....	.....	.....	.....	.....	.....	.....Imports
Average new supply.	1,312,548	1,268,433	+ 3.48	.....	.....	.....	.....	.....	.....	Average new supply

Natural Gasoline and Motor Blends — Barrels

Districts	Daily Avg. Production Oct. (net)	Daily Avg. Production Sept. (net)	Stocks End of October	Stocks End of September	Motor Fuel Blends Made In Oct.	Motor Fuel Blends Made In Sept.	Stocks Blends End of Oct.	Stocks Blends End of Sept.	Districts
Appalachian.....	6,836	5,317	55,095	51,738	4,595	4,214	5,286	5,048	.....Appalachian
Ill., Ky., etc.....	998	714	6,405	5,929	24	24	214	238	.....Ill., Ky., etc.
Seminole, etc.....	23,349	25,158	52,857	62,643	31,190	33,452	4,762	6,476	.....Seminole, etc.
Osage County.....	5,837	5,476	12,810	80,071	167	119	71	95	.....Osage County
Rest of State.....	16,436	16,349	96,286	103,952	31,381	47,167	4,405	7,952	.....Rest of State
Total Oklahoma	45,622	46,983	161,953	246,666	62,738	80,738	9,238	14,523	.....Total Oklahoma
Kansas.....	2,151	2,143	14,000	13,738	714	952	167	214	.....Kansas
Panhandle.....	14,823	14,127	92,881	190,143	12,762	15,952	2,571	952	.....Panhandle
North Texas.....	2,995	3,016	23,071	17,452	1,048	3,071	786	1,381	.....North Texas
West Central.....	10,599	9,682	50,833	53,643	5,714	4,405	905	857	.....West Central
Rest of State.....	2,842	2,778	7,667	9,119	3,024	1,857	262	476	.....Rest of State
Total Texas.....	31,259	29,603	174,452	270,357	22,548	25,285	4,524	3,666	.....Total Texas
Louisiana.....	4,839	4,127	16,762	17,262	881	857	310	286	.....Louisiana
Arkansas.....	2,227	2,222	6,429	6,000	13,143	11,667	548	952	.....Arkansas
Rocky Mountain.....	3,379	3,413	14,143	14,952	.....	.....	.....	.....	.....Rocky Mountain
Long Beach.....	15,438	15,317	.....	.....	.....	.....	.....	.....	.....Long Beach
Ventura Ave.....	5,453	5,397	.....	.....	.....	.....	.....	.....	.....Ventura Ave.
Seal Beach.....	3,303	2,222	.....	.....	.....	.....	.....	.....	.....Seal Beach
Huntington Beach.....	2,842	2,698	.....	.....	.....	.....	.....	.....	.....Huntington Beach
Santa Fe Springs.....	20,122	19,603	.....	.....	.....	.....	.....	.....	.....Santa Fe Springs
Rest of California.....	13,978	12,698	.....	.....	.....	.....	.....	.....	.....Rest of California
Total California.....	61,136	57,935	40,976	34,357	.....	.....	.....	.....	.....Total California
TOTAL U. S.....	158,447	152,457	490,215	660,999	104,643	123,737	20,287	24,927	.....TOTAL U. S.

tories and no car shortage. Business and banking are almost invincibly strong."

As a result the speaker concluded that there will not be an old fashioned business depression in 1930. He predicted that the first quarter will find business poor, the second quarter will see a slight improvement and that the last half of the year will bring good business, but not as good as in 1929.

The speaker mentioned the automobile industry as one reason for the slowing down of business. He showed that auto manufacturers overproduced and now must shut down to work off excess stocks. Since his talk dealt more with steel than oil he did not bring out that our industry also has overproduced and has a surplus of finished goods which must be sold.

"The year 1930 will be a year of more trust in investments and fewer investment trusts; a year of reduced profit margins and fewer margin calls; a year without so many shocks to the nervous system and without so many warnings by the Federal Reserve System," the speaker said. "The year will start poorly and finish strong."

The October report of the Bureau of Mines was released at an opportune time. Figures were available at the time of the American Petroleum Institute meeting at Chicago. As a result of the discussion of its figures opinion at the meeting crystalized clearly in favor of a reduction in refinery throughout.

Indications are that discussions of the situation already are bearing fruit. The weekly report of the American Petroleum Institute for the week ended Dec. 7 shows reporting plants

Kerosene Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1928.....	5,058,000	46,000	2,350,000	2,799,000	7,670,000
February.....	4,749,000	11,000	1,551,000	3,266,000	7,613,000
March.....	4,715,000	6,000	1,852,000	2,722,000	7,760,000
April.....	5,033,000	20,000	1,912,000	3,168,000	7,733,000
May.....	5,243,000	1,000	2,057,000	3,383,000	7,537,000
June.....	4,849,000	24,000	1,655,000	2,323,000	8,432,000
July.....	4,894,000	19,000	1,834,000	3,042,000	8,470,000
August.....	5,339,000	2,000	1,678,000	3,246,000	8,887,000
September.....	4,960,000	.....	2,090,000	3,164,000	8,593,000
October.....	5,190,000	55,000	1,755,000	3,469,000	8,614,000
Total Ten Months.....	50,030,000	184,000	18,734,000	30,582,000	8,614,000
November.....	4,908,000	.....	2,091,000	2,545,000	8,886,000
December.....	4,968,000	20,000	1,241,000	3,632,000	9,001,000
1928 Total.....	60,156,000	204,000	22,066,000	38,008,000	9,001,000
January, 1929.....	4,700,000	38,000	1,918,000	2,956,000	8,865,000
February.....	4,435,000	20,000	1,591,000	3,519,000	8,210,000
March.....	4,515,000	5,000	1,899,000	2,976,000	7,855,000
April.....	4,434,000	21,000	1,657,000	3,156,000	7,497,000
May.....	4,902,000	6,000	1,463,000	3,200,000	7,742,000
June.....	4,928,000	15,000	1,790,000	2,547,000	8,348,000
July.....	4,406,000	15,000	1,288,000	2,684,000	8,797,000
August.....	5,111,000	24,000	2,054,000	3,189,000	8,689,000
September.....	4,667,000	.....	1,105,000	3,387,000	8,864,000
October.....	5,379,000	.....	2,252,000	3,136,000	8,865,000
Total Ten Months.....	47,477,000	144,000	17,017,000	30,750,000	8,865,000
Change This Year Over Like Period Last Year.....	—2,553,000	—40,000	—1,717,000	+168,000	+251,000
Per Cent.....	—5.10	—21.74	—9.16	+0.55	+2.91

Kerosene Situation by Districts — Barrels

Districts	October Daily Avg. Output	Sept. 1929 Daily Avg. Output	October Change %	October Daily Avg. Shipments	September Daily Avg. Shipments	October Change %	Stocks October 1929	Stocks September 1929	Stocks October 1928	Districts
Gulf Coast Texas...	39,129	30,333	+29.00	32,710	36,700	—10.87	1,386,000	1,187,000	1,419,000	...Gulf Coast Texas
Gulf Coast Louis...	14,194	14,033	+ 1.15	14,516	13,233	+ 9.70	716,000	726,000	1,267,000	..Gulf Coast Louis.
Total Gulf.....	53,323	44,366	+20.19	47,226	49,933	— 5.42	2,102,000	1,913,000	2,686,000	.....Total Gulf
East Coast.....	23,645	16,967	+39.36	29,774	20,200	+47.40	1,144,000	1,334,000	1,339,000	.....East Coast
California.....	30,129	23,300	+29.31	30,355	16,667	+82.13	3,103,000	3,110,000	1,860,000	..... California
Total Coastal....	107,097	84,633	+26.54	107,355	86,800	+23.68	6,349,000	6,357,000	5,885,000	....Total Coastal
Appalachian.....	11,484	10,200	+12.59	11,000	10,600	+ 3.77	261,000	246,000	302,000	.....Appalachian
Ind., Ill., Ky., etc...	14,548	16,333	—10.93	19,419	12,700	+ 5.29	931,000	1,082,000	1,394,000	..Ind., Ill., Ky., etc.
Total East Cent..	26,032	26,533	— 1.89	30,419	23,300	+30.55	1,192,000	1,328,000	1,696,000	Total East Cent.
Okla., Kans., Mo...	27,355	29,800	— 8.20	22,903	26,833	—14.65	795,000	657,000	638,000	..Okla., Kans., Mo.
Inland Texas.....	7,806	7,867	— 0.78	7,710	7,533	+ 2.35	171,000	168,000	130,000	.....Inland Texas
No. La. and Ark....	2,000	2,200	— 9.09	2,065	2,033	+ 1.57	24,000	26,000	19,000	..No. La. and Ark.
Total Southwest..	37,161	39,867	— 6.79	32,678	36,399	—11.39	990,000	851,000	787,000	Total Southwest
Rocky Mountain...	3,226	4,533	—28.83	3,032	3,233	— 6.22	334,000	328,000	246,000	..Rocky Mountain
Total Inland.....	66,419	70,933	— 6.36	66,129	62,932	+ 5.08	2,516,000	2,507,000	2,729,000	....Total Inland
TOTAL U. S.....	173,516	155,566	+11.54	173,484	149,732	+15.86	8,865,000	8,864,000	8,614,000	...TOTAL U. S.
Imports.....	323	.....	.....	.....	.....	.....	.....	.....	.....	.....Imports
Exports.....	.....	.....	.....	72,645	36,833	+97.23	.....	.....	.....	.....Exports
Average new supply.	173,839	155,566	+11.75	.....	.....	.....	.....	.....	.....	Average new supply
Avg. ship to dom. distrib. or users.....	.....	.....	.....	100,839	112,899	—10.68	.....	.....	.....	Avg. ship to dom. ....distrib. or users

operating at 69.4 per cent of capacity as compared with 72.5 per cent in the last week of November. The cut in runs apparently amounted to about 100,000 barrels daily average. This, of course, is far from being enough to correct the situation but will be some help.

The refiners have been unfortunate in the type of weather which has been experienced so far this winter. In November extremely low temperatures and excessive snow had an unfavorable effect on consumption. The Middle West also has had a second severe cold wave in December which came before the first had much more than spent its force.

While weather conditions were not so bad in October there was a decided drop in the rate of consumption increase. Domestic shipments of gasoline, totaling 32,816,000 barrels, exceeded those in October, 1928, by only 2,120,000 barrels, or only 6.96 per cent. In September domestic demand was 14.9 per cent over September, 1928, and for the first nine months of the year cumulative domestic demand exceeded that in 1928 by more than 14 per cent. The effect of the drop in October shipments was to bring cumulative domestic demand for 10 months down to 13.6 per cent over the first 10 months of last year.

Refiners failed to change their operating schedules during the month to the new level of demand. On the contrary a new record was made in the output of gasoline. Production

Gas and Fuel Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	*Stocks End of Month
January, 1928.....	33,013,000	553,000	4,175,000	.....	30,665,000
February.....	31,897,000	666,000	3,420,000	.....	29,560,000
March.....	34,437,000	848,000	3,969,000	.....	29,104,000
April.....	33,870,000	1,176,000	4,211,000	.....	29,669,000
May.....	35,620,000	784,000	3,612,000	.....	32,887,000
June.....	35,765,000	468,000	4,238,000	.....	36,085,000
July.....	36,754,000	484,000	4,261,000	.....	36,410,000
August.....	37,390,000	515,000	3,420,000	.....	39,236,000
September.....	37,104,000	397,000	3,226,000	.....	39,900,000
October.....	36,941,000	320,000	3,356,000	.....	39,599,000
Total Ten Months.....	352,791,000	6,211,000	37,888,000	.....	39,599,000
November.....	35,771,000	411,000	3,320,000	.....	37,878,000
December.....	37,293,000	646,000	3,254,000	.....	34,926,000
1928 Total.....	425,755,000	7,268,000	44,462,000	.....	34,926,000
January, 1929.....	36,838,000	335,000	3,699,000	.....	32,522,000
February.....	34,331,000	466,000	2,795,000	.....	30,118,000
March.....	37,456,000	1,146,000	2,600,000	.....	30,195,000
April.....	37,533,000	1,778,000	2,892,000	.....	33,404,000
May.....	38,570,000	1,983,000	3,100,000	.....	35,636,000
June.....	37,338,000	1,660,000	3,375,000	.....	37,332,000
July.....	37,980,000	2,206,000	3,531,000	.....	40,075,000
August.....	39,011,000	2,589,000	3,579,000	.....	39,316,000
September.....	37,468,000	1,811,000	1,953,000	.....	40,646,000
October.....	38,974,000	2,589,000	4,057,000	.....	38,717,000
Total Ten Months.....	375,509,000	16,563,000	31,581,000	.....	38,717,000
Change This Year Over Like Period Last Year.....	+22,718,000	+10,352,000	—6,307,000	.....	—882,000
Per Cent.....	+6.44	+166.67	—16.65	.....	—2.23

*East of California only.

Gas and Fuel Oil Situation by Districts — Barrels

Districts	October Daily Avg. Output	Sept. 1929 Daily Avg. Output	October Change %	October Daily Avg. Shipments	September Daily Avg. Shipments	October Change %	Stocks October 1929	Stocks September 1929	Stocks October 1928	Districts
Gulf Coast Texas...	181,774	188,333	— 3.48	156,710	157,433	— 0.46	10,986,000	10,209,000	9,783,000	..Gulf Coast Texas
Gulf Coast Louis....	40,065	36,467	+ 9.87	122,903	32,833	+274.33	†2,275,000	4,843,000	5,283,000	..Gulf Coast Louis.
Total Gulf.....	221,839	224,800	— 1.32	279,613	190,266	+46.96	13,261,000	15,052,000	15,066,000	.....Total Gulf
East Coast.....	242,452	236,233	+ 2.63	257,484	222,100	+15.93	8,664,000	9,130,000	7,401,000	.....East Coast
California.....	425,968	417,133	+ 2.12	.....	.....	.....	.....	.....	.....	..... California
Tota Coastal....	890,259	878,166	+ 1.38	*537,097	*412,366	+30.25	21,925,000	24,182,000	22,467,000	....Total Coastal
Appalachian.....	21,065	16,667	+26.39	24,387	16,167	+50.84	957,000	1,060,000	1,212,000	.....Appalachian
Ind., Ill., Ky., etc...	108,387	99,900	+ 8.50	97,226	97,633	— 0.42	3,811,000	3,465,000	3,821,000	..Ind., Ill., Ky., etc.
Okla., Kans., Mo...	100,452	114,900	—12.57	108,258	119,433	— 9.36	5,196,000	5,438,000	6,900,000	..Okla., Kans., Mo.
Inland Texas.....	78,935	79,233	— 0.38	71,323	73,900	— 3.49	4,264,000	4,028,000	2,846,000	.....Inland Texas
N. La. and Ark.....	38,806	40,633	— 4.50	40,677	41,933	— 3.00	1,170,000	1,228,000	1,066,000	....N. La. and Ark.
Rocky Mountain...	19,323	19,433	— 0.57	14,516	26,033	—44.24	1,394,000	1,245,000	1,314,000	...Rocky Mountain
Total Inland.....	366,968	370,766	— 1.02	356,387	375,099	— 4.99	16,792,000	16,464,000	17,159,000	....Total Inland
TOTAL U. S.....	1,257,227	1,248,932	+ 0.66	*893,484	*787,465	+13.46	38,717,000	40,646,000	39,626,000	....TOTAL U. S.
Imports.....	83,516	60,367	+38.35	.....	.....	.....	.....	.....	.....	.....Imports
Exports.....	.....	.....	.....	130,871	65,100	+101.03	.....	.....	.....	.....Exports
Avg. new supply...	1,340,743	1,309,299	+ 2.40	.....	.....	.....	.....	.....	.....	Avg. new supply
Avg. ship. to dom. distributors or users.	.....	.....	.....	*762,613	*722,365	+ 5.57	.....	.....	.....	Avg. ship. to dom. distributors or users

*Exclusive of California †Approximately 2,500,000 barrels gas oil and fuel oil transferred to unfinished oils.

Lubricant Situation by Districts — Barrels

Districts	October Daily Avg. Output	Sept. 1929 Daily Avg. Output	October Change %	October Daily Avg. Shipments	September Daily Avg. Shipments	October Change %	Stocks October 1929	Stocks September 1929	Stocks October 1928	Districts
Gulf Coast Texas...	17,612	20,400	—13.67	16,839	21,467	—21.56	1,813,000	1,789,000	1,644,000	..Gulf Coast Texas
Gulf Coast Louis....	2,419	2,167	+11.63	2,355	1,733	+35.89	89,000	87,000	99,000	..Gulf Coast Louis.
Total Gulf.....	20,031	22,567	—11.24	19,194	23,200	—17.27	1,902,000	1,876,000	1,743,000	.....Total Gulf
East Coast.....	31,484	29,433	+ 6.97	21,935	26,067	—15.85	2,729,000	2,433,000	2,582,000	.....East Coast
California.....	7,322	6,967	+ 5.10	6,774	6,467	+ 4.75	894,000	877,000	912,000	.....California
Total Coastal....	58,837	58,967	— 0.22	47,903	55,734	—14.05	5,525,000	5,186,000	5,237,000	....Total Coastal
Appalachian.....	13,839	14,267	— 3.00	14,258	14,433	— 1.21	1,132,000	1,145,000	1,222,000	.....Appalachian
Ind., Ill., Ky., etc...	11,129	10,967	+ 1.48	8,452	10,467	—19.25	751,000	668,000	733,000	..Ind., Ill., Ky., etc.
Okla., Kans., Mo...	6,355	7,933	—19.89	6,161	8,267	—25.47	378,000	372,000	422,000	..Okla., Kans., Mo.
Inland Texas.....	839	867	— 3.23	645	633	+ 1.90	44,000	38,000	77,000	.....Inland Texas
N. La. and Ark.....	516	567	— 8.99	516	567	— 8.99	7,000	7,000	2,000	....N. La. and Ark.
Rocky Mountain...	1,548	1,500	+ 3.20	1,194	1,267	— 5.76	184,000	173,000	137,000	...Rocky Mountain
Total Inland.....	34,226	36,101	— 5.19	31,226	35,634	—12.37	2,496,000	2,403,000	2,593,000	....Total Inland
TOTAL U. S.....	93,063	95,068	— 2.11	79,129	91,368	—13.40	8,021,000	7,589,000	7,830,000	....TOTAL U. S.
Imports.....	65	100	—35.00	.....	.....	.....	.....	.....	.....	.....Imports
Exports.....	.....	.....	.....	34,742	23,000	+51.05	.....	.....	.....	.....Exports
Avg. new supply...	93,128	95,168	— 2.14	.....	.....	.....	.....	.....	.....	Avg. new supply
Avg. ship. to dom. distributors or users.	.....	.....	.....	44,387	68,368	—35.08	.....	.....	.....	Avg. ship. to dom. distributors or users

for the month totaled 39,663,000 barrels, as compared with 37,152,000 barrels in September and 34,403,000 barrels in October 1928. The increase in production over the same month a year ago is thus 15.3 per cent, which is more than double the rate of increase in domestic demand.

A helpful feature of the month's business was an increase in export demand to 6,053,000 barrels from 4,426,000 barrels in September and 4,050,000 barrels in October last year. The increase in exports brought total refinery shipments up to 37,843,000 barrels, which is an increase of 10.2 per cent over October 1928.

The net result of October overproduction of refined oils was an increase in stocks of all oils of 3,369,000 barrels. Of this amount only 514,000 barrels was crude oil, in pipe lines and tank farms, as well as at refineries. The remaining 2,855,000 barrels consisted of refined products ready for market. More than half of the increase in stocks of petroleum and its products was gasoline, of which the increase in stocks was 1,820,000 barrels.

For some time it has been recognized that the industry would have to assume the burden of an increase of about 8,000,000 barrels in the carry-over of gasoline stocks into 1930. Since the October figures have been released it appears that this estimate was much too low.

Gasoline stocks on Oct. 31 totaling 35,042,000 barrels exceeded those of Oct. 31, 1928, by 8,602,000 barrels. And there were still two months during which stocks normally increase, before Jan. 1. It now may be expected that the excess carry-over of gasoline stocks will exceed 10,000,000 barrels or more than 30 per cent. The increase at the end of October was 32.5 per cent over October a year ago.

Overproduction of gasoline in October was most acute at coastal plants. All tidewater districts increased their production of gasoline 5.46 per cent over September while inland groups increased their production 0.57 per cent.

Lubricating Oil Supply and Demand — Barrels

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January.....	2,654,000	.....	934,000	1,592,000	7,988,000
February.....	2,728,000	.....	841,000	1,543,000	8,332,000
March.....	2,878,000	.....	837,000	1,990,000	8,383,000
April.....	3,027,000	1,000	1,059,000	2,334,000	8,018,000
May.....	3,091,000	3,000	1,063,000	1,989,000	8,060,000
June.....	3,009,000	1,000	1,095,000	2,143,000	7,832,000
July.....	2,828,000	1,000	1,063,000	1,931,000	7,667,000
August.....	2,891,000	1,000	813,000	2,035,000	7,711,000
September.....	2,833,000	1,000	808,000	1,995,000	7,742,000
October.....	2,979,000	1,000	769,000	2,123,000	7,830,000
Total Ten Months.....	28,918,000	9,000	19,282,000	9,645,000	7,830,000
November.....	2,748,000	1,000	895,000	1,763,000	7,921,000
December.....	2,993,000	3,000	878,000	1,699,000	8,340,000
1928 Total.....	34,659,000	13,000	11,055,000	23,137,000	8,340,000
January, 1929.....	2,945,000	1,000	1,116,000	1,521,000	8,649,000
February.....	2,503,000	4,000	871,000	1,751,000	8,534,000
March.....	2,943,000	2,000	1,045,000	1,581,000	8,853,000
April.....	2,899,000	3,000	786,000	2,628,000	8,341,000
May.....	3,005,000	4,000	844,000	2,322,000	8,370,000
June.....	2,928,000	6,000	989,000	*2,446,000	*7,869,000
July.....	2,936,000	4,000	1,118,000	2,167,000	7,524,000
August.....	3,143,000	5,000	926,000	2,268,000	7,478,000
September.....	2,852,000	3,000	690,000	2,054,000	7,589,000
October.....	2,885,000	2,000	1,077,000	1,378,000	8,021,000
Total Ten Months.....	29,039,000	34,000	9,462,000	20,116,000	8,021,000
Change This Year Over Like Period Last Year.....	+121,000	+25,000	+180,000	+471,000	+191,000
Per Cent.....	+0.41	+277.78	+1.94	+2.40	+2.44

*Revised.

Natural Gasoline

Marked improvement was shown in the natural gasoline situation throughout the country. Stocks of natural gasoline in the hands of manufacturers were reduced 25.9 per cent during the month to 490,215 barrels. Stocks at the end of September were 660,999 barrels.

Paraffin Wax Supply and Demand — Pounds

	Production	Imports	Exports	Domestic Shipments	Stocks End of Month
January, 1928.....	55,378,000	1,117,000	39,712,000	17,696,000	149,725,000
February.....	49,158,000	1,337,000	38,036,000	25,705,000	136,479,000
March.....	50,170,000	1,767,000	40,147,000	28,747,000	119,522,000
April.....	57,548,000	2,996,000	34,122,000	36,235,000	109,709,000
May.....	51,072,000	1,855,000	34,826,000	24,171,000	103,639,000
June.....	50,792,000	1,715,000	33,594,000	30,563,000	91,989,000
July.....	45,273,000	2,226,000	35,290,000	19,722,000	84,476,000
August.....	54,429,000	2,793,000	31,446,000	30,630,000	79,622,000
September.....	50,428,000	1,880,000	27,133,000	19,380,000	85,417,000
October.....	54,546,000	1,930,000	26,281,000	22,798,000	92,814,000
Total Ten Months.....	518,794,000	19,616,000	340,587,000	255,647,000	92,814,000
November.....	56,665,000	2,994,000	25,170,000	23,354,000	103,949,000
December.....	54,685,000	2,138,000	26,603,000	23,825,000	110,344,000
1928 Total.....	630,144,000	24,748,000	391,623,000	303,563,000	110,344,000
January, 1929.....	58,885,000	2,982,000	28,065,000	20,625,000	123,521,000
February.....	50,027,000	3,120,000	25,359,000	11,256,000	140,053,000
March.....	56,372,000	2,575,000	22,127,000	18,469,000	158,404,000
April.....	57,976,000	2,680,000	22,664,000	25,709,000	170,687,000
May.....	53,783,000	2,748,000	18,662,000	29,417,000	179,139,000
June.....	52,714,000	3,070,000	24,986,000	21,173,000	188,764,000
July.....	46,171,000	4,606,000	24,445,000	23,798,000	191,298,000
August.....	53,377,000	5,433,000	28,114,000	31,116,000	190,878,000
September.....	44,513,000	2,896,000	31,990,000	22,583,000	183,714,000
October.....	56,377,000	3,943,000	39,037,000	15,903,000	189,094,000
Total Ten Months.....	530,195,000	34,053,000	265,449,000	220,049,000	189,094,000
Change This Year Over Like Period Last Year.....	+11,401,000	+14,437,000	—75,138,000	+35,598,000	+96,280,000
Per Cent.....	+2.20	+73.60	—22.06	+13.92	+103.73

Quick Get-A-Way!

LION

1c

Above price of LION U. S. MOTOR to Jobber. Retails at 3c premium.

KNIX NOX

"Not a Knock in a Train Load"

As quick as a covey of quail in pickup and flight, and yet *without* noise (knock), is this new LION anti-knock Gasoline. (It's red). A high test fuel, brimful of power! Though on the market for a few months, the demand has been tremendous and with additional facilities we are now again able to supply it.

LION OIL REFINING COMPANY

Exchange Building, El Dorado, Ark.
1120 Heyburn Bldg., Louisville, Ky.
215 Cotton States Life Bldg., Nashville, Tenn.
Edwards Hotel Building, Jackson, Miss.
Petroleum Exchange Corp., Blum Bldg., Chicago, Ill.

Daily Average Crude Oil Production and Imports

Stocks in the hands of manufacturers in Oklahoma were reduced 84,713 barrels during the month. In Texas stocks were cut 95,905 barrels. In California stocks increased 6600 barrels.

Production of natural gasoline increased only 6000 barrels daily average during the month to 158,447 barrels per day. The bulk of the increase was in Texas and California.

Kerosene

Supply and demand of kerosene in October was virtually in balance. Total stocks increased only 1000 barrels during the month to 8,865,000 barrels. Since October a year ago stocks at refineries have increased 251,000 barrels or 2.9 per cent.

Lubricating Oils

Demand for lubes fell 13.4 per cent in October, from 91,368 barrels per day in September to 79,129 barrels per day. Production was reduced 2.1 per cent from 95,068 barrels per day in September to 93,063 barrels per day in October. Stocks rose 432,000 barrels to 8,021,000 barrels. Export demand was excellent during the month, but domestic shipments were much lower than in September. Wax continued to pile up in refiners' hands. Current stocks are double those of last year.

Gas and Fuel Oil

Although production of gas and fuel oils increased approximately 1,500,000 barrels in October the normal seasonal increase in consumption more than overcame the surplus output. Stocks east of California were reduced approximately 2,000,000 barrels to 38,717,000 barrels.

Coke, Asphalt, Miscellaneous Products

	Coke Output (Tons)	Coke Stocks (Tons)	Asphalt Output (Tons)	Asphalt Stocks (Tons)	Miscel. Products Output (Bbls.)	Miscel. Products Stocks (Bbls.)	Unfin. Oil Output (Bbls.)	Unfin. Oil Stocks (Bbls.)	Losses (Bbls.)	
January, 1928.....	103,200	331,300	202,000	219,000	613,000	1,183,000	2,293,000	36,762,000	2,142,000	.....January, 1928
February.....	100,100	335,100	207,000	233,900	633,000	1,297,000	2,199,000	37,282,000	1,976,000	.....February
March.....	107,200	352,400	265,200	269,800	659,000	1,527,000	2,282,000	37,128,000	2,268,000	.....March
April.....	109,400	342,100	273,800	273,700	656,000	1,601,000	2,478,000	38,215,000	2,222,000	.....April
May.....	118,400	348,300	330,700	262,200	879,000	1,392,000	2,792,000	38,762,000	2,398,000	.....May
June.....	118,100	343,700	331,600	270,800	892,000	1,130,000	2,325,000	38,380,000	2,578,000	.....June
July.....	127,000	384,900	330,800	247,200	938,000	1,200,000	2,787,000	40,657,000	2,820,000	.....July
August.....	136,100	402,100	316,400	225,500	991,000	857,000	2,530,000	39,596,000	2,660,000	.....August
September.....	119,100	402,200	305,600	202,900	873,000	748,000	2,226,000	39,732,000	2,644,000	.....September
October.....	125,000	404,400	319,800	209,900	867,000	723,000	1,954,000	38,452,000	2,657,000	.....October
November.....	131,000	418,800	244,400	228,000	723,000	726,000	2,838,000	38,114,000	2,388,000	.....November
December.....	132,000	436,900	169,800	235,500	677,000	635,000	3,166,000	38,601,000	2,275,000	.....December
January, 1929.....	137,900	403,800	188,400	229,100	661,000	653,000	2,513,000	38,264,000	2,542,000	.....January, 1929
February.....	126,700	388,100	208,200	235,600	617,000	652,000	2,273,000	38,170,000	2,059,000	.....February
March.....	129,400	402,400	227,500	250,100	738,000	691,000	2,873,000	38,471,000	2,602,000	.....March
April.....	130,700	444,900	282,600	248,800	763,000	735,000	4,553,000	39,645,000	2,910,000	.....April
May.....	141,900	471,200	315,100	236,300	994,000	814,000	4,405,000	40,305,000	2,701,000	.....May
June.....	153,800	498,400	326,900	247,100	1,114,000	750,000	4,333,000	*42,722,000	3,283,000	.....June
July.....	157,900	563,900	386,000	243,300	1,097,000	733,000	3,580,000	42,440,000	3,328,000	.....July
August.....	168,900	608,000	378,700	246,800	976,000	742,000	3,444,000	43,251,000	3,545,000	.....August
September.....	161,200	648,500	364,700	230,500	784,000	682,000	3,223,000	43,375,000	3,213,000	.....September
October.....	172,300	672,100	355,600	227,400	789,000	687,000	3,510,000	45,965,000	3,190,000	.....October

*Revised

Fuel Oil Use in Home Heating Gains 70% in Three Years

WASHINGTON, Dec. 12

THAT the wide advertising of fuel oil for home heating done by the oil industry the past two or three years is beginning to bear fruit is revealed in large increases in consumption of fuel oil for this purpose, in statistics recently published in information circular 6204 by the U. S. Bureau of Mines, Washington.

Domestic and commercial heating consumed 70 per cent more fuel oils in 1928 than in 1926, and 30 per cent more than in 1927. A total of 14,875,000 barrels of fuel, gas, and furnace oils and distillates were used for this purpose in 1928, compared with 11,274,000 barrels in 1927, and 8,831,000 barrels in 1926. Of this total, approximately 5,500,000 barrels were furnace oil and distillates used for home heating, and 9,375,000 barrels were gas and fuel oils used for heating buildings.

The three largest consumers of fuel and gas oils were the railroads, the oil refining industry, and domestic and commercial heating units.

Consumption of fuels in the 26 central states lying between the Pacific and Atlantic coasts totaled 138,224,000 barrels in 1928, an increase of 9,289,000 barrels, or 7.2 per cent, over consumption in the corresponding period of 1927.

Railroads purchased 38,824,000 barrels of fuel oil in these central states during 1928, a gain of 484,000 barrels over the 1927 purchases.

Deliveries of bunker oil totaled 16,812,000 barrels, as against 18,001,000 barrels in 1927. Companies supplying manufactured gas and electric power in the central states purchased 6,781,000 barrels of gas and fuel oils in 1928, an increase of 4.3 per cent over 1927.

Fuel oil used in the generation of electric power in the central states increased from 1,953,000 barrels in 1927 to 2,326,000 barrels in 1928, while natural gas consumption in the generation of such power gained from 55,494,847,000 cubic feet in 1927, to 64,195,555,000 cubic feet.

Natural gas developments during the past three years have helped to increase the use of gas in place of fuel oil in manufacturing plants in the area adjacent to the natural gas fields of the Gulf coast and the Mid-Continent. This development caused a decrease of more than 3,000,000 barrels in fuel oil consumption in the south central states in 1928 as compared with 1926.

Here are consumption figures on fuel and gas oil by the larger users in 1928, compared with 1927, and per cent of change over 1927, in the 26 central states:

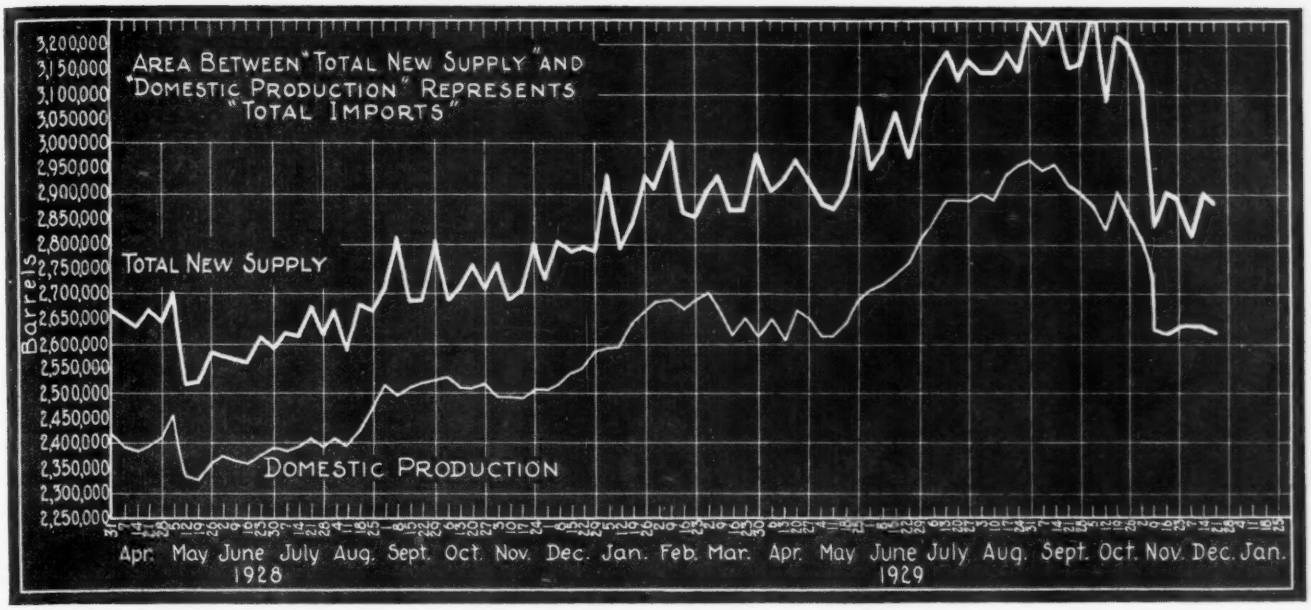
	1928	1927	% Change in 1928
Railroads	38,824,000	38,340,000	+ 1.3
Oil refineries	27,766,000	23,559,000	+17.9
Domestic and commercial heating	14,875,000	11,274,000	+31.0
Ships' bunkers (bunker oil)	16,812,000	18,001,000	— 6.6
General manufacturing plants ..	9,568,000	11,663,000	—17.8
Gas and electric companies	6,781,000	6,502,000	+ 4.3

WASHINGTON—Crude production and refinery output in Poland have been declining the first six months of the year, while domestic consumption of petroleum products has been steadily increasing, resulting in diminishing exports.

Crude output during the first half of 1929 totaled 2,342,746 barrels, compared with 2,574,334 in the first six months of 1928, a drop of 9 per cent.

RICHMOND, Va., Dec. 13.—William B. Walker, of New York, director of the Standard Oil Co. of New York, and manager of the company's foreign export department, is desperately ill at Newbern, N. C., it has been learned here.

Daily Average Crude Oil Production and Imports



Daily average gross output of United States, by fields, for week ending with dates below as compiled by American Petroleum Institute

PRODUCTION SUMMARY

	Dec. 14	Dec. 7
Production east of Rockies	**1,929,150**	**1,931,850**
Decrease		**2,700**
Total production in U. S.	**2,622,250**	**2,630,550**
Decrease		**8,300**
Crude oil imports	**245,430**	**277,570**
Decrease		**32,140**
Total crude supply	**2,867,680**	**2,908,120**
Decrease		**40,440**

OKLAHOMA

	Dec. 14	Dec. 7
Allen Dome	23,100	21,050
Asher	3,700	3,950
Blackwell	3,700	3,700
Bowlegs	23,900	23,650
Braman	3,650	3,700
Bristow-Slick	18,700	18,650
Burbank	17,400	17,600
Carr City	9,650	10,850
Cromwell	7,550	7,600
Cushing	15,750	15,700
Davenport	1,250	1,300
Duncan District	8,500	8,450
Earlsboro	66,650	66,750
East Seminole	3,900	4,950
Fox	1,300	1,300
Garber	4,850	4,850
Graham	3,900	3,900
Healdton	12,650	12,650
Hewitt	7,850	7,850
Hubbard	1,700	1,700
Little River	69,600	69,200
Logan County	13,850	13,800
Maud	8,050	8,200
Mission	15,600	15,150
North Okmulgee	11,400	11,300
Oklahoma City	64,400	72,550
Osage (outside Burbank)	26,750	26,750
Papoose	3,200	3,200
Pearson	850	850
St. Louis	54,700	54,050
Sasakwa	12,350	8,250
Scholem-Alechem	13,800	13,800
Searight	9,200	9,100
Seminole	23,800	25,400
South Okmulgee	7,100	7,100
Thomas	650	650
Tonkawa	8,800	8,800
Wewoka	4,300	4,300
Yale-Jennings	7,500	7,350
Others	54,950	55,150
Total, Oklahoma	650,500	655,100
Decrease		4,600

KANSAS

Augusta-Fox Bush	3,000	3,000
Churchill	5,300	5,150
El Dorado-Towanda	12,900	12,900
Florence-Covert	1,000	1,050
Greenwood County	21,600	21,700
Oxford	3,650	3,400
Peabody-Elbing	3,100	3,150
Rainbow Bend	1,150	1,150
Russell	3,400	3,400
Sedgwick County	23,350	23,050
Others	31,400	31,800
Total, Kansas	109,850	109,750
Increase		100

NORTH LOUISIANA

Bellevue	600	600
Caddo, light	10,600	10,600
Caddo, heavy	2,850	2,850
Cotton Valley	2,300	2,500
De Soto and Red River	3,550	3,000
Elm Grove	550	550
Haynesville	4,700	4,800
Homer	4,000	3,700
Pleasant Hill	850	750
Urania	5,500	5,500
Zwolle	3,550	3,100
Others	550	650
Total, North Louisiana	39,600	38,600
Increase		1,000

ARKANSAS

Champagnolle	5,750	5,650
El Dorado	4,350	4,300
Lisbon	1,100	1,150
Nevada	1,200	1,050
Smackover, light	5,750	5,800
Smackover, heavy	43,250	43,750
Stephens	1,050	1,000
Others	100	100
Total, Arkansas	62,550	62,800
Decrease		250

TEXAS (Outside Gulf Coast)

Panhandle District

	Dec. 14	Dec. 7
Carson County	9,600	9,850
Gray County	64,650	61,500
Hutchinson County	27,200	27,800
Wheeler County	450	800
Others	850	800
Total, Panhandle Texas	102,750	100,750
Increase		2,000

North Texas

Archer County	18,400	18,550
Burkburnett	9,600	9,550
Electra	11,750	11,700
Iowa Park and K. M. A.	4,900	4,850
Montague-Cooke	14,800	14,700
Wilbarger	29,850	30,000
Others	800	900
Total, North Texas	90,100	90,250
Decrease		150

West Central Texas

	Dec. 14	Dec. 7
Brown County	10,200	10,400
Callahan County	3,100	3,350
Coleman County	6,300	6,400
Eastland-Desdemona	6,300	6,400
Jack County	4,050	3,850
Palo Pinto County	500	500
Shackleford County	9,300	9,400
Stephens County	6,200	6,400
Throckmorton County	600	600
Young County	7,100	7,350
Others	1,450	1,400
Total, West Central Texas	55,100	56,050
Decrease		950

West Texas

	Dec. 14	Dec. 7
Crane and Upton Counties	47,400	45,150
Crockett County	2,200	2,000
Howard County	38,200	40,400
Jones County	2,400	2,500
Mitchell and Scurry Counties	2,600	2,450
Pecos County	141,200	142,300
Reagan County	17,450	16,950
Winkler County	95,600	95,400
Others	3,100	3,200
Total, West Texas	350,150	350,350
Decrease		200

East Central Texas

Boggy Creek	4,100	3,900
Corsicana-Powell	6,750	6,850
Currie	400	400
Mexia	5,200	5,150
Nigger Creek	300	300
Richland	300	300
Van Zandt County	2,700	400
Wortham	900	950
Total, East Central Texas	20,650	18,250
Increase		2,400

Southwest Texas

Dale	400	350
Laredo District	9,300	9,350
Luling	10,800	10,700
Lytton Springs	900	900
Refugio County	14,500	15,450
Salt Flat	30,550	31,300
Somerset	1,500	1,700
Others	2,600	2,350
Total, Southwest Texas	70,500	72,100
Decrease		1,600
Total, Texas (Outside Gulf Coast)	689,250	687,750
Increase		1,500

GULF COAST

Coastal Texas

Barbers Hill	17,500	18,700
Batson	1,300	1,350
Big Creek	5,000	3,600
Blue Ridge	2,100	2,450
Boling	1,200	1,250
Damon Mound	500	500
Fannett	1,600	1,600
Goose Creek	5,300	5,400
Hull	10,250	10,950
Humble	14,200	16,100
Orange County	3,000	3,050
Pierce Junction	11,500	11,400
Raccoon Bend	9,250	9,250
Saratoga	950	1,000
Somerville	1,700	1,500
Sour Lake	2,450	2,500
South Liberty	5,150	5,600
Spindletop	18,550	19,350
Sugarland	12,200	12,200
West Columbia	6,550	6,850
Others	7,050	6,200
Total, Coastal Texas	137,300	140,800
Decrease		3,500

Coastal Louisiana

East Hackberry	2,150	1,650
Edgerly	600	600
Evangeline	1,600	1,600
Lockport	3,400	3,550
Old Hackberry	2,000	2,100
Sorrento Dome	150	150
Sulphur Dome	5,000	7,000
Vinton	4,400	4,350
Others	2,800	3,050
Total, Coastal Louisiana	22,100	24,050
Decrease		1,950
Total Gulf Coast	159,400	164,850
Decrease		5,450

ROCKY MOUNTAIN

Wyoming

Big Muddy	2,100	2,100
Elk Basin	750	700
Brass Creek	2,150	2,100
Labarge	2,350	2,250
Lance Creek	150	150
Lost Soldier	3,200	3,400
Oregon Basin	3,650	4,300
Rock Creek	2,300	2,300
Salt Creek	34,100	28,950
Others	4,700	4,650
Total, Wyoming	55,450	50,900
Increase		4,550

Montana

Cat Creek	1,250	1,200
Pondera	2,500	2,400
Sunburst	6,800	6,800
Others	50	100
Total, Montana	10,600	10,500
Increase		100

Colorado

Florence	700	650
Fort Collins	1,800	1,850
Moffat (Craig)	1,050	1,050
Others	1,650	1,700
Total, Colorado	5,200	5,250
Increase		50

New Mexico

Artesia	750	850
Balance Lea & Eddy Cunties	4,600	4,350
Hogback	450	400
Rattlesnake	1,300	1,500
Table Mesa	100	100
Others	900	750
Total, New Mexico	8,100	7,950
Increase		150
Total, Rocky Mountain	79,350	74,600
Increase		4,750

California

	Dec. 14	Dec. 7
Dominguez	9,000	8,500
Elwood-Goleta	38,000	33,000
Huntington Beach	41,500	42,000
Inglewood	22,500	23,000
Kettleman Hills	9,600	10,000
Long Beach	104,000	105,000
Midway-Sunset	75,000	73,500
Santa Fe Springs	159,500	167,500
Seal Beach	29,000	30,000
Ventura Avenue	50,500	51,700
Others	154,500	154,500
Total, California	693,100	698,700
Decrease		5,600

EASTERN

(Not including Michigan)	124,600	122,100
Increase		2,500

MICHIGAN

Mt. Pleasant	6,500	8,550
Muskegon	7,250	7,500
Saginaw	250	250
Total, Michigan	14,000	16,300
Decrease		2,300

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations Week Ended December 13 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Dec. 13
Plants Reporting....	12	29	25	15	12	93
Da. Av. Cap. (Bbls.)..	92,000	160,200	86,600	81,500	54,900	475,200
Da. Cracking Capacity	30,700	52,600	17,200	5,000	22,700	128,200
Da. Av. Crude Runs..	62,574 + 15.3	111,319 + 2.3	61,831 + 0.6	29,371 + 1.5	59,747 + 3.9	324,842 + 4.5
Da. Av. Other Oils...	8,504 + 7.6	2,798 — 44.4	2,662 + 9.7	2,374 — 6.8	3,078 + 89.8	19,416 — 0.2
GASOLINE—Gallons						
Stocks, Dec. 6.....	17,916,000	49,757,000	16,899,000	12,180,000	8,985,000	105,737,000
Prod. 12-6 to 12-13...	10,575,000 + 11.5	17,144,000 — 0.2	8,836,000 + 8.9	2,826,000 — 10.7	5,707,000 + 5.5	45,088,000 + 4.0
Ship. 12-6 to 12-13....	9,740,000 + 12.2	15,317,000 — 15.2	8,080,000 + 5.3	3,090,000 — 10.7	5,840,000 + 23.4	42,067,000 — 1.3
Stocks, Dec. 13.....	18,751,000 + 4.7	51,584,000 + 3.7	17,655,000 + 4.5	11,916,000 — 2.2	8,852,000 — 1.5	108,758,000 + 2.9
Ratio Sales to Prod...	92.1%	89.3%	91.4%	109.3%	102.3%	93.3%
KEROSENE—Gallons						
Stocks, Dec. 6.....	14,612,000	8,285,000	2,136,000	41,000	1,440,000	26,514,000
Prod. 12-6 to 12-13...	1,974,000 + 6.5	2,450,000 + 27.9	1,741,000 + 14.2	.....	304,000 — 29.3	6,469,000 + 12.4
Ship. 12-6 to 12-13....	1,447,000 + 3.6	2,817,000 + 34.8	825,000 — 52.4	3,000 — 87.0	467,000 + 12.8	5,559,000 — 1.7
Stocks, Dec. 13.....	15,139,000 + 3.6	7,918,000 — 4.4	3,052,000 + 42.9	38,000 — 7.3	1,277,000 — 11.3	27,424,000 + 3.4
Ratio Sales to Prod...	73.3%	115.0%	47.4%	.....	153.6%	85.9%
STOVE DISTILLATE—Gallons						
Stocks, Dec. 6.....	2,595,000	4,853,000	1,480,000	187,000	142,000	9,257,000
Prod. 12-6 to 12-13...	763,000 + 99.7	1,114,000 + 3.9	372,000 — 13.1	51,000 — 45.2	300,000 + 41.3	2,600,000 + 18.9
Ship. 12-6 to 12-13....	539,000 — 5.6	1,015,000 — 39.1	478,000 + 19.2	121,000 — 37.3	186,000 + 17.0	2,339,000 — 21.8
Stocks, Dec. 13.....	2,819,000 + 8.6	4,952,000 + 2.0	1,374,000 — 7.2	117,000 — 34.4	256,000 + 80.2	9,518,000 + 2.8
Ratio Sales to Prod...	70.6%	91.1%	128.5%	237.2%	62.0%	90.0%
GAS OIL—Gallons						
Stocks, Dec. 6.....	3,001,000	38,541,000	2,823,000	11,038,000	4,111,000	59,514,000
Prod. 12-6 to 12-13...	2,049,000 + 49.0	2,243,000 — 42.6	979,000 + 41.5	899,000 + 10.0	2,101,000 — 9.7	8,271,000 — 9.3
Ship. 12-6 to 12-13...	1,561,000 — 1.4	3,021,000 — 35.0	1,120,000 +264.8	1,052,000 + 31.5	2,332,000 — 18.0	9,086,000 — 11.8
Stocks, Dec. 13.....	3,489,000 + 16.3	37,763,000 — 2.0	2,682,000 — 5.0	10,885,000 — 1.4	3,880,000 — 5.6	58,699,000 — 1.4
Ratio Sales to Prod...	76.2%	134.7%	114.4%	117.0%	111.0%	109.9%
FUEL OIL—Gallons						
Stocks, Dec. 6.....	12,295,000	35,487,000	67,523,000	23,112,000	21,694,000	160,111,000
Prod. 12-6 to 12-13...	4,538,000 + 4.0	7,067,000 + 25.0	7,417,000 — 3.9	3,693,000 + 6.0	6,551,000 + 18.6	29,266,000 + 9.4
Ship. 12-6 to 12-13...	5,368,000 + 1.3	8,484,000 — 0.7	7,457,000 — 16.2	6,608,000 + 23.3	5,891,000 + 8.8	33,808,000 + 0.8
Stocks, Dec. 13.....	11,465,000 — 6.8	34,070,000 — 4.0	67,483,000 — 0.1	20,197,000 — 12.6	22,354,000 + 3.0	155,569,000 — 2.8
Ratio Sales to Prod...	118.3%	120.1%	100.5%	178.9%	89.9%	115.5%

Gasoline Produced by Various Methods, Week Ended December 13

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run.....	6,757,000	63.9	11,092,000	64.7	5,991,000	67.8	2,613,000	92.5	3,147,000	55.1	29,600,000	65.6
Cracked.....	2,989,000	28.3	4,855,000	28.3	1,709,000	19.3	95,000	3.4	1,836,000	32.1	11,484,000	25.5
Natural.....	829,000	7.8	1,197,000	7.0	1,136,000	12.9	118,000	4.1	724,000	12.8	4,004,000	8.9
Total.....	10,575,000		17,144,000		8,836,000		2,826,000		5,707,000		45,088,000	

+ or — columns are % change over previous week.

Gasoline Stocks Rise as Output Is Stepped Up

Staff Special—By Telegraph
TULSA, Dec. 16

GASOLINE production at 93 Mid-Continent refineries increased 1,700,000 gallons in the week ended Dec. 13, as compared with output in the week ended Dec. 6. Gasoline shipments were 600,000 gallons lower. Gasoline stocks increased 3,000,000 gallons last week.

Increases in production were registered in Kansas, North Texas and Louisiana-Arkansas districts. Oklahoma production was steady and West Texas slightly lower.

Gasoline shipments increased slightly in Kansas, North Texas and Louisiana-Arkansas, but fell sharply in Oklahoma and slightly in West Texas.

Crude charges were increased 14,000 barrels daily average in the whole field. Every field except West

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Dec. 13. Change in stocks figures from Nov. 15.

GASOLINE

	Gallons
Production	179,211,000
Shipments	168,825,000
Net change in stocks	+10,386,000
Ratio sales to production	94.2%

KEROSENE

Production	24,940,000
Shipments	21,562,000
Net change in stocks	+3,378,000
Ratio sales to production	86.5%

STOVE DISTILLATE

Production	9,225,000
Shipments	10,500,000
Net change in stocks	—1,275,000
Ratio sales to production	113.8%

GAS OIL

Production	30,002,000
Shipments	35,092,000
Net change in stocks	—5,090,000
Ratio sales to production	117.0%

FUEL OIL

Production	117,523,000
Shipments	134,278,000
Net change in stocks	—16,755,000
Ratio sales to production	114.3%

Texas shared in the increase.

Gas oil and fuel oil stocks were the only ones of major commodities to be reduced. The former were lowered 900,000 gallons although both production and shipments were less than in the previous week. Fuel stocks were reduced 4,500,000 gallons with production higher and shipments steady.

Stocks of kerosene and distillates were increased, the former 900,000 gallons and the latter 260,000 gallons.

New Society of Rheology To Meet Dec. 19

CLEVELAND, Dec. 13.—The first meeting of the newly-organized Society of Rheology will be held at the U. S. Bureau of Standards Dec. 19 and 20, according to an announcement made by Wm. W. Buffum, business manager of the organization.

This Society was organized on April 29 for the purpose of fostering the development of the science of the deformation and flow of matter. All substances which flow, as paints, lacquers, oils, petroleum, fats, waxes, and many others, come within its scope.

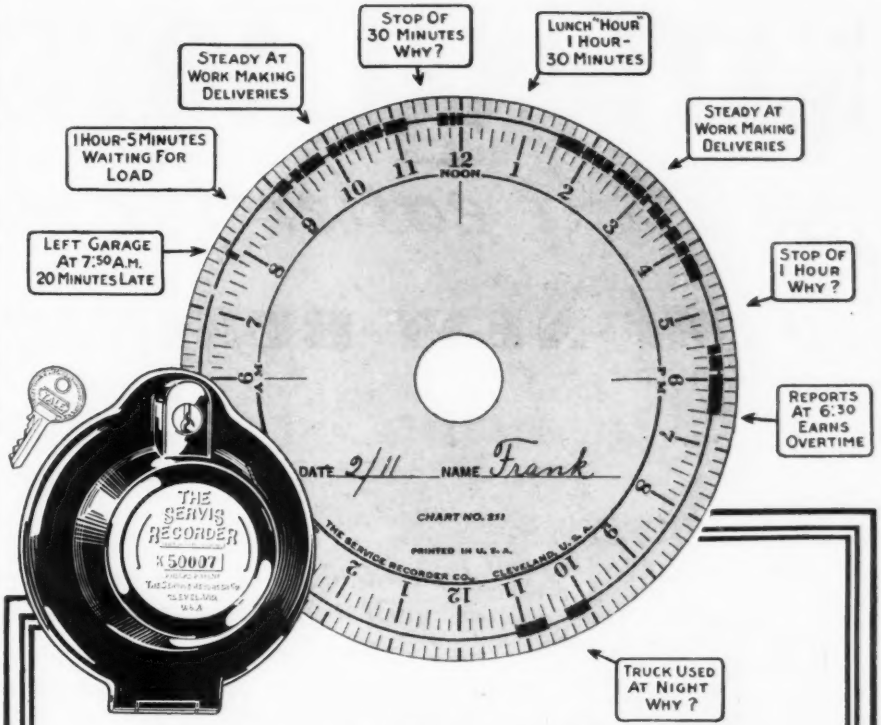
The society's purpose is to collect and correlate the information available regarding the laws of flow, to carry on the study of plasticity, elasticity, and viscosity, and to develop from this the science of flow, or rheology.

The organization of the society was the result of a thorough canvass of the scientists of the world interested in this work. The Journal of Rheology will be the official organ of the society, and will be published quarterly, in January, April, July, and October.

Dr. Eugene C. Bingham, of Lafayette College, Easton, Penna., is editor of the journal, and will be assisted by a corps of 25 assistant and contributing editors in the United States and foreign countries, representing the most prominent scientists on this subject.

Any person interested in the objects of the society may apply for membership, which application must be indorsed by two active members. The annual dues are: Individual members in U. S., $3.00; members in foreign countries, $3.50; corporations, $5.00.

The first issue of the journal was in October, which includes, in addition to several contributed articles, the constitution and by-laws of the society and abstracts of recent literature and patents on related subjects. Among the articles that may be of interest to petroleum chemists and technologists, appearing in this issue may be mentioned "The Theory of Plastic Flow in the Rotation Viscometer" and "The General Law of Flow of Matter," both by Markus Reiner, and "A Multiple Bulb Consistometer," by Winslow H. Herschel.


STOP OF 30 MINUTES WHY?
LUNCH "HOUR" 1 HOUR-30 MINUTES
STEADY AT WORK MAKING DELIVERIES
STEADY AT WORK MAKING DELIVERIES
1 HOUR-5 MINUTES WAITING FOR LOAD
LEFT GARAGE AT 7:50 A.M. 20 MINUTES LATE
STOP OF 1 HOUR WHY?
REPORTS AT 6:30 EARNS OVERTIME
TRUCK USED AT NIGHT WHY?
THE SERVIS RECORDER
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DATE 2/11
NAME Frank
CHART NO. 251
THE SERVICE RECORDER CO. CLEVELAND, U.S.A.

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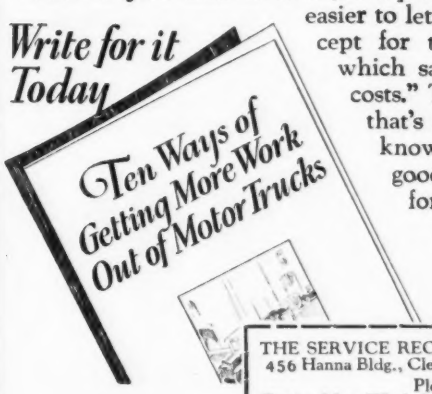

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Attention of .....
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Town ..... State .....

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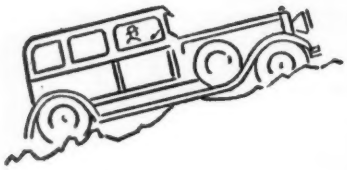
makes it easier for you to get NEW BUSINESS



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Export Buyers Place Large Gasoline Orders in Mid-Continent

Staff Special
TULSA, Dec. 14.

ORDERS for 20 to 25 million gallons of export grade gasoline were placed with Mid-Continent refiners late in the week of Dec. 9-14 by members of the Export Petroleum Association. The gasoline will be shipped the first two months of 1930. The buying was similar to that done about six weeks ago by the same exporters, and virtually every refiner who can make the goods was given an opportunity to obtain a portion of the business.

Approximately a million and a half gallons of kerosene also were bought for export, but this transaction was done independently of the export association.

Domestic gasoline demand was comparatively light in all districts, but few price changes were noted.

Fuel oils were not as active as they were around the first of the month but contract movement was heavy and prices for some of the better grades of oil advanced slightly. Distillates and gas oils also were in good demand in most quarters. Kerosene was quiet except for the export purchase.

Natural gasolines were less active and more goods appeared on the spot market with a resultant lowering of prices.

Neutral oils and cylinder stocks were generally unchanged, both in price and demand. Wax inquiries were slightly better, several refiners reported.

Gasolines

Representatives of exporters who are members of the Export Petroleum Association settled a much discussed question as to the association's plans for the first of next year when they placed the orders for 20 to 25 million gallons of export gasoline with refiners in the Mid-Continent who desired to make the goods.

The association members about six weeks ago bought between 18 and 20 million gallons for shipment over the remainder of the year, and many of the trade had wondered if the association would continue to buy in this district after those shipments were completed. If they did not, it was pointed out, the refiners would have to look again to independent foreign buyers for their export business.

Exporters bought both 61-63, 390 e.p. and 64-66, 375 e.p. gasolines, paying 7.50 and 7.75 cents respectively, f.o.b. north Texas plants. Every refiner who could make these two grades for export was understood to have been given an opportunity to accept a part of the business. A closer estimate of the purchases could not be given, due to the fact that the ultimate amount will be contingent upon the operations schedules at several plants. The goods were understood to have been bought for shipment the first two months of next year.

The buying had not been announced generally to the trade at the close of business Dec. 14, but it was not expected the announcement would have any material effect on the domestic market other than to keep the north Texas refiners more interested in making higher gravities than in following the domestic market.

The domestic market meanwhile was comparatively quiet all week. Contract shipments were fair, several refiners reported, but jobbers continued their strict hand-to-mouth buying in the spot market.

Refiners making full specifications 58-60 U. S. Motor continued to encounter considerable competition in several districts from gasoline which did not quite meet the government requirements but which was acceptable to some buyers as long as the goods could be obtained at prices somewhat lower than those prevailing for a full specification gasoline.

While the Louisiana and Arkansas refiners did not share to any extent in the export purchases because they make but little high gravity gasoline, the buying nevertheless gave them considerable indirect relief. As long as the north Texas refiners devote their attention to the export business, the less competition the Louisiana and Arkansas group has from north Texas for the southeastern domestic business.

Natural Gasolines

Natural gasolines lost ground due primarily to the present refined market situation. The tendency was for more refiners to order small shipments on contract and this consequently placed more naturals on the spot market. One large buyer purchased a quantity of grade AA early in the week at 6.375 cents a gallon and some grade BB at 5.875 cents. No other large buying was reported. A few cars of the lower grades were picked up late in the week at 5.875 cents by another buyer.

Prices were lower by 0.125 to 0.25 cent a gallon from those prevailing the previous week.

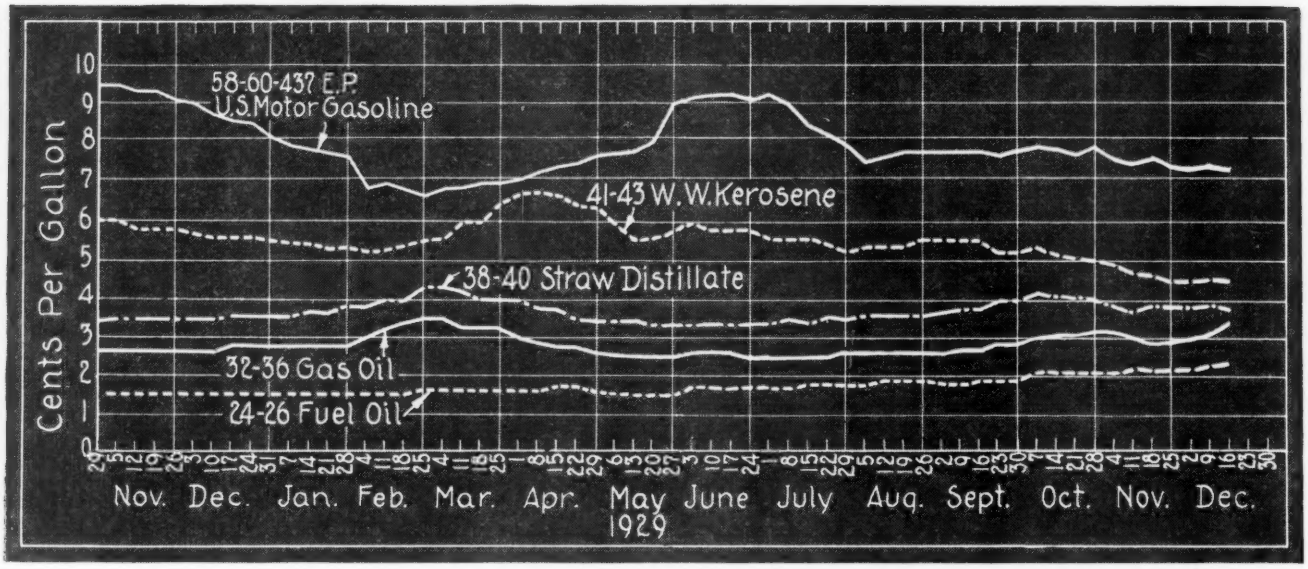
Kerosenes

The purchase of export kerosene caused a few refiners to advance domestic prices slightly but demand from jobbers continued to be slow. The price paid for the export kerosene was reported to have been 4 cents a gallon, f.o.b. north Texas plants. Several refiners received inquiries from the purchaser which would indicate that more goods might be bought in the near future.

Distillates and Gas Oils

The supply of distillates and gas oil with low cold test was somewhat limited, several buyers reported, while ordinary grades could be freely

Current Prices of Principal Mid-Continent Refined Products



Prices shown are in Group 3 basis and extended to date shown in Refinery Market Tables Section of this issue

obtained in most districts. Demand was good for the better grades. Prices for both distillates and gas oils were generally unchanged with the possible exception of ordinary dark gas oil which advanced 0.125 cent a gallon.

Fuel Oils

Fuel oils suitable for winter use were reported scarcer with 28-30, 24-26, and 18-22 grades almost unobtainable for immediate shipment in virtually all districts. Prices for two or three of the higher grades were virtually nominal. Sales in the spot market were confined to only one or two refiners in each district and extremely few spot sales were made by these refiners. Prices for nearly all grades advanced in the course of the week.

It was understood that jobbers generally had bought their requirements around the first of December and were not as active in the spot market; industrial users also were not as active, but the movement on contract was comparatively heavy despite the quieter market.

Bright Stocks, Neutral Oils, Wax

Little change was reported for bright stock. Demand continued sufficient to hold price levels at the advanced level of two weeks ago. Neutral oil quotations were still higher for several grades that were comparatively scarce for prompt shipment.

Wax was reported quiet by a number of the major sellers. Inquiries for January and February shipment, however, were numerous at higher prices than for present spot market. A few of these inquiries were from New York export buyers. One refiner reported an inquiry from one of the buyers for a quantity of goods for shipment in January, February and March at 3.375 cents a pound.

Naphtha Price Changes

CHICAGO—On Dec. 14 S. O. Indiana reduced t.w. price of oleum spirits 1c, making new price 14.7c, and price of v.m. and p. naphtha, ½c, making new price 16.7c, in Chicago only. Cleaners' naphtha remains unchanged at 17c.

Correction: price of cleaners' naphtha in Chicago has been incorrectly published since March 23, 1929. Correct price from that date to May 23, was 16c per gallon; from May 23 to Dec. 16, 17c per gallon.

Shipments From Southern California

LOS ANGELES, Dec. 12.—Bulk petroleum shipments from Southern California ports for week ending December 7 were as follows: (Figures in barrels.)

Destination	Crude	Gasoline	Diesel	Kerosene	Gas-Oil	Fuel
Pacific For.	.....	97,020	64,277	98,195	.....	381,437
Atlantic Dom.	.....	424,532	.....	.....	80,432	.....
Atlantic For.	.....	206,114	.....	.....	.....	.....

Bulk shipments for the month of November showed a decrease of 855,281 barrels under the total shipment from Southern California ports for October, to give a total for November of 10,100,475 barrels. The shipments were made as follows: (Figures in barrels.)

Destination	Crude	Gasoline	Diesel	Kerosene	Distillate	Fuel
Pacific Dom.	1,002,019	893,863	141,452	3,546	3,435	1,672,204
Pacific For.	484,475	320,226	359,783	281,404	23,287	1,811,787
Atlantic Dom.	.....	1,907,910	239,501	49,000	369,136	.....
Atlantic For.	.....	442,228	94,019	.....	.....	.....

Prices 10 Years Ago
Dec. 15, 1919

	Oklahoma	Penna.
58-60 U. S. Motor.....	16.00–16.25c	20.00c
80-84 Natural	22.75–23.00c	.....
Kerosene (41-43 Okla.; 47 w. w. Pa.)	9.50–9.75c	13.00c
Fuel Oil (24-26 Okla.; 38-40 Pa.)	$2.75–$3.00	10.50c
Crude (Okla. 35-35.9)....	$2.50	$4.50
Chicago tank wagon	.....	21.00c

Prices A Year Ago
Dec. 17, 1928

	Oklahoma	Penna.
58-60 U. S. Motor.....	8.6250c	10.50–10.75c
Grade A Natural	8.625–8.75c	.....
Kerosene (Okla. 41-43; Pa., 47 w. w.)	5.50–5.75	7.75–8.75c
Fuel Cil (Okla. 24-26; Pa. 36-40)	$0.625–$0.675	4.75–5.25c
Crude (Okla. 35-35.9)....	$1.31	$3.75
Chicago tank wagon	.....	15.00c

Chicago Resale Market

Zero Burning Oils Gain in Activity

Staff Special
CHICAGO, Dec. 14

ZERO grades of gas and fuel oils again were the most active products in the Chicago resale market, although the mild weather of the past week retarded movement of these oils to some extent. The spot gasoline market continued in the doldrums and many sellers said they expected little activity until the end of the year. Jobbers generally were not interested in buying as gasoline consumption has fallen off and they were unwilling to fill their storage prior to taking inventories.

The bulk of the goods moved in the Chicago market last week originated in the Mid-Continent, most sellers reported. There was some U. S. Motor gasoline available from Indiana and Illinois refineries for movement into Chicago at 6 to 6.25 cents, f.o.b. Group 3, but practically all the distress material has been absorbed.

Spot U. S. Motor gasoline, out of Mid-Continent refineries, was available in Chicago at lower prices than prevailed the previous week. Whereas in the week ended Dec. 7, carlot marketers reported their minimum buying price in Oklahoma, north and west Texas was 6.50 cents, last week marketers reported they were offered U. S. Motor freely at 6.375 cents and in some cases they could buy at 6.25 cents.

Sales of U. S. Motor gasoline to the jobbing trade ranged generally from 6.50 to 7 cents. A number of Oklahoma and Chicago district refiners continued to quote 58-60 U. S. Motor at 7.25 cents but their spot sales were infrequent. Several refiners, who had previously quoted 7.25 cents, lowered their prices to 7 cents.

The higher gravity gasolines enjoyed fairly good movement and were commanding generally unchanged prices. Several buyers reported that good 68-70, 350-360 e.p. gasoline was becoming hard to obtain for prompt shipment. Most quotations for this grade were at 8.25 to 8.375 cents.

Kerosene still was more or less a "dead issue" in the Chicago market and prices continued on a downward trend. A few sales of 41-43 w.w. were reported at 4 cents, but most sellers reported getting at least 4.125 cents. Sales also were reported at 4.25 and 4.375 cents.

Mild weather throughout the past week slowed down demand for distillate, in the opinion of many sellers, although movement was still fairly good. The 38-40 straw was offered at 3.75 to 4 cents, although several buyers reported it less freely offered at the lower figure. A number of sellers were quoting their special distillates at higher prices than some of the kerosene now in the market. Two Chicago distributors reported buying 38-40 straw distillate, for shipment over the last half of December and all of January, at 3.75 cents.

The tank car market on gas and fuel oils continued on a steady basis and a number of Chicago marketers reported good specification 28-30 and 18-22 zero fuel oils and 32-36 straw zero gas oil were becoming very hard to obtain for prompt shipment. Quotations up to $1.25 were heard on the 28-30 zero fuel but goods were available at $1.175 to $1.20. No more $1.15 quotations were heard. Industrial gas oil was reported quiet in most quarters and was freely offered at unchanged prices.

Tank wagon distributors of furnace oils generally reported a steady call for home burner owners, but said that mild weather had slowed things up to some extent.

Moderate temperatures are forecasted by the Chicago weather bureau for the first half of next week in the Standard of Indiana territory, with temperatures dropping in the latter half. Rather frequent precipitation is likely.

NEW YORK, Dec. 14.—Standard Oil Co. of New Jersey has placed orders for seven tankers, three to be built in Germany, two in England, and one each in Italy and in Denmark, according to a report to the Department of Commerce. The orders reported placed in Germany are for tankers of 16,000 tons capacity.

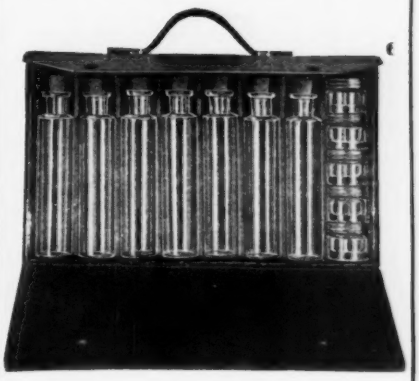
Shell Buys Tank Cars

CLEVELAND, Dec. 16.—Shell Oil Co. of California has ordered 100 tank cars from General American Tank Car Co., according to Railway Age.

Lubes Reflect Holiday Quiet

HOUSTON, Dec. 16.—The approach of the holiday season found conditions quiet in the Gulf Coastal lubricant market. Prices were unchanged in comparison with those of recent weeks, and demand was normal for December. Shipments were moving regularly on contracts previously made, but there was little new spot business.

Box Type Cases



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NATIONAL PETROLEUM NEWS
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Cleveland, Ohio

Comparative Prices of 58-60 U. S. Motor Gasoline, 437 E. P., Group 3 and Point of Origin, to Jobbers Only

In Effect December 16

	Price F.O.B. Group 3		*Price F.O.B. Point of Origin*		*If for Particular Destination*
Oklahoma	7.1204	(Wt. Avg.)	7.1204	(Wt. Avg.)	.....
Kansas	6.75–7.00	.....	.....	.....	S. O. Neb. & Indiana Territory, etc.
Kansas	.....	.....	No sales reported	(Wt. Avg.)	Kansas only.
North Texas	6.50–7.00	.....	6.50–6.75	.....	.....
West Texas	6.50–7.00	.....	6.50–6.75	.....	.....
Louisiana-Arkansas	6.50–7.00	.....	.....	.....	Michigan, Ohio and Indiana.
Louisiana-Arkansas	.....	.....	7.25	.....	State or differential haul.
Indiana-Illinois	6.875–7.25	.....	.....*	.....	S. O. Indiana territory except Detroit and vicinity. For Ohio on delivered basis only.

*Shipments made from E. Chicago, Ind., and Wood River, Ill., according to conditions and freight rates; no prices F.O.B. point of origin can be given.

Chicago Resale Market

CHICAGO, Dec. 16.

SPOT gasolines were generally inactive in the Chicago market last week and prices were down 0.125 to 0.25 cent. Carlot marketers reported U. S. Motor available for resale at 6.25 to 6.375 cents at Mid-Continent refineries. The minimum price to jobbers generally was 6.50 cents. Several refiners continued to quote 7.25 cents, but few sales were reported above 7 cents. Very little distress goods offered in the spot market at present, although occasional cars of U. S. Motor originating at Illinois and Indiana refineries have been offered to Chicago jobbers at 6 to 6.25 cents, f.o.b. Group 3.

Following prices represent sales made on group 3 freight basis, although goods may originate elsewhere.

	Prices Dec. 16	**Prices Dec. 9**	**Prices Dec. 2**
58-60 U.S. Motor, 437 e.p.	6.50 – 7.00	6.625– 7.25	6.625– 7.25
60-62 437 e.p. gasoline	6.625– 7.25	6.75 – 7.50	6.875– 7.50
60-62 400 e.p. gasoline	7.125– 7.50	7.25 – 7.75	7.375– 7.75
64-66 375 e.p. gasoline	7.875– 8.125	7.875– 8.125	7.875– 8.125
41-43 w.w. kerosene	4.125– 4.375	4.25 – 4.50	4.375– 4.75
38-40 straw distillate	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
32-36 ordinary dark gas oil	2.75 – 3.00	2.75 – 3.00	2.875– 3.00
32-36 dark zero gas oil	3.125– 3.25	3.125– 3.25	3.00 – 3.25
32-36 straw zero gas oil	†3.25 – 3.50	†3 25 – 3.50	3.125– 3.375
28-30 zero fuel oil	$1.175–$1.20	$1.15 –$1.20	$1.15 –$1.20
28-30 fuel oil	$1.05 –$1.10	$1.05 –$1.10	$1.05 –$1.10
24-26 fuel oil	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.875
18-22 fuel oil, low sulfur	$0.70 –$0.75	$0.70 –$0.725	$0.65 –$0.675
18-22 fuel oil, high sulfur zero	$0.70 –$0.75	$0.70 –$0.75	$0.675–$0.725

Weighted Average Prices

OKLAHOMA

	Dec. 16		**Dec. 9**		**Dec. 2**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of cars**	**Price**
58-60 U. S. Motor, 437 e.p.	27	7.1204	42	7.2321	98	7.2219
60-62 437 e.p. gasoline	No sales reported		No sales reported		4	7.0625
60-62 400 e.p. gasoline	4	7.5625	4	7.5000	8	7.4219
64-66 375 e.p. gasoline	2	8.0000	6	7.7917	No sales reported	

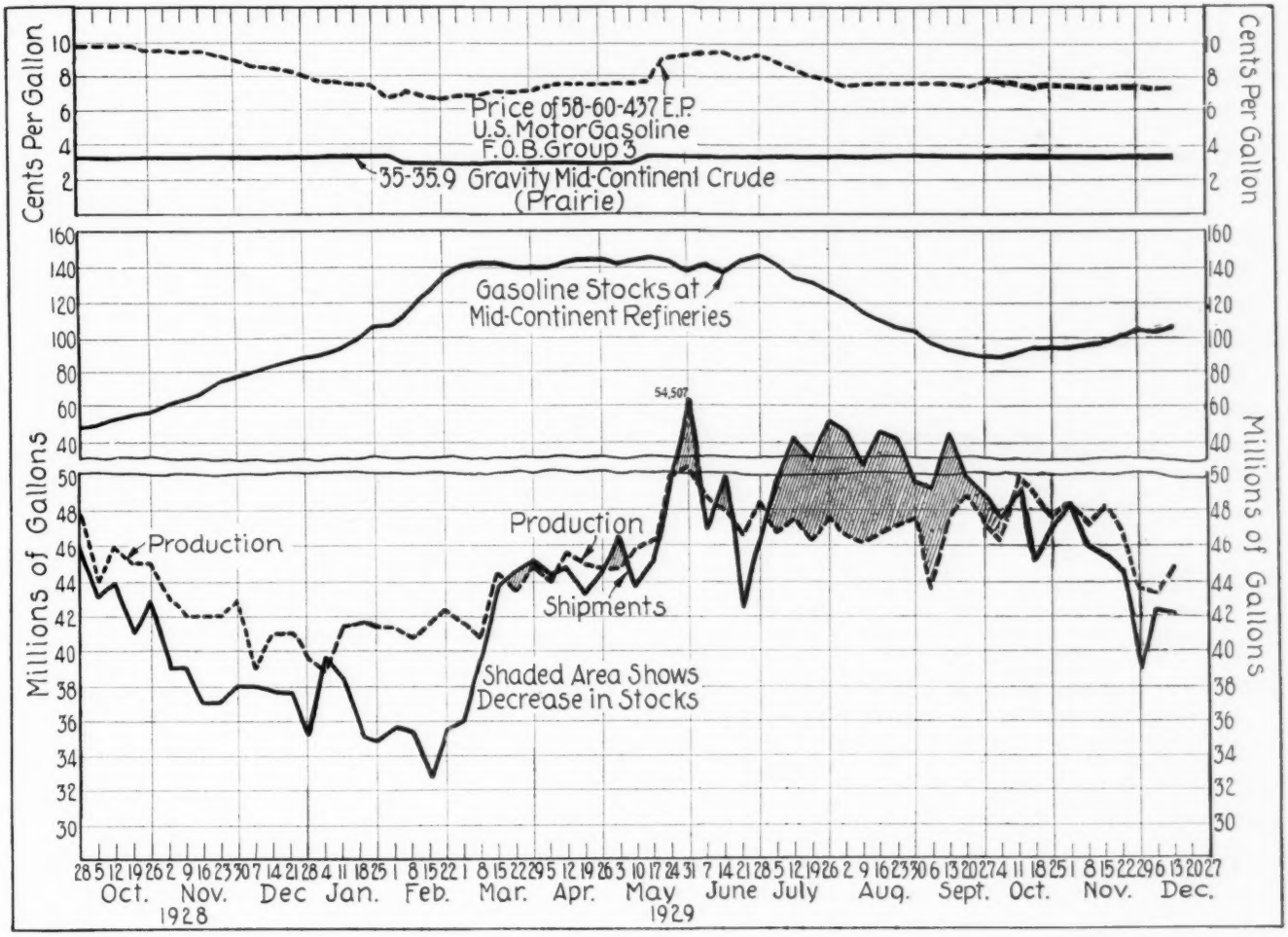
KANSAS

	Dec. 16		**Dec. 9**		**Dec. 2**	
	No. of cars	**Price**	**No. of cars**	**Price**	**No. of Cars**	**Price**
58-60 U. S. Motor, 437 e.p.	No sales reported		1	7.5000	No sales reported	

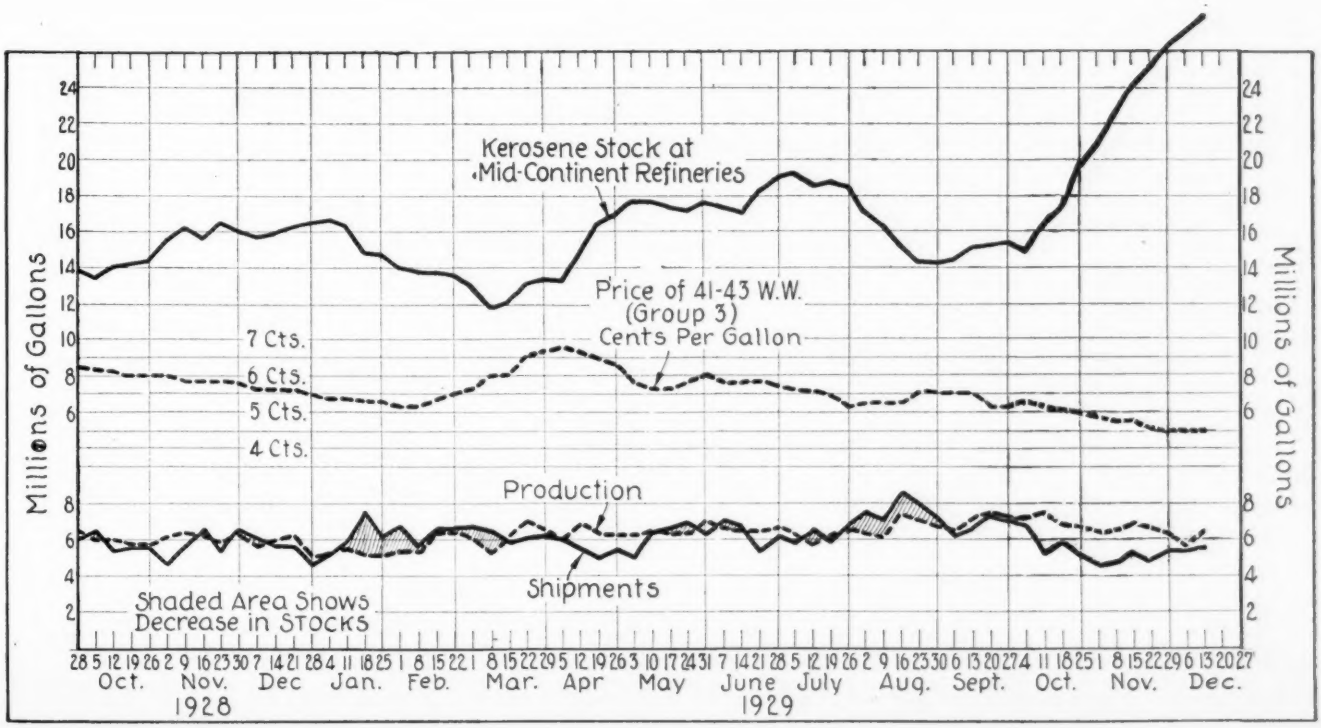
†Prices nominal

Barometer of Mid-Continent Refinery Market—Week Ending December 13

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Price of 58-60-437 E.P. U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude (Prairie)
Gasoline Stocks at Mid-Continent Refineries
54,507
Millions of Gallons
Production
Shipments
Shaded Area Shows Decrease in Stocks
Oct. Nov. Dec Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1928
1929

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 114



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA	Prices Dec. 16	Prices Dec. 9	Prices Dec. 2
48-50 450 e.p. naphtha...	6.625– 7.00	6.50 – 7.00	6.75 – 7.00
50-52 450 e.p. naphtha...	6.625– 7.00	6.50 – 7.00	6.75 – 7.00
56-58 450 e.p. gasoline...	6.50 – 6.75	6.625– 6.75	6.625– 6.75
58-60 450 e.p. gasoline...	6.50 – 6.75	6.625– 6.75	6.75 – 6.875
64-66 390 e.p. gasoline...	7.50 – 7.625	7.625	7.50 – 7.625
68-70 350-360 e.p. gasoline	8.25	8.25 – 8.375	8.125– 8.25
PENNSYLVANIA			
52-54 Naphtha.....	7.25 – 8.00	7.25 – 8.00	7.25 – 8.00
54-56 Naphtha.....	7.25 – 8.25	7.25 – 8.25	7.50 – 8.25
58-60 U.S. Motor 437 e.p.	8.00 – 9.00	8.00 – 9.00	8.125– 9.00
60-62 400-410 e.p. gasoline	8.375– 9.00	8.375– 9.00	8.50 – 9.25
64-66 390 e.p. gasoline....	8.50 – 9.50	8.625– 9.50	8.75 – 9.50
68-70 350-360 e.p.....	9.50 –10.50	9.75 –10.50	10.00 –10.50
OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)			
U. S. Motor Gasoline			
Ohio, delivery at any point.....	9.50	10.00	10.00
KANSAS (F. O. B. refinery Kansas destination)			
60-62 400 e.p. gasoline...	7.50 – 7.75	7.50 – 7.75	7.50 – 7.75
64-66 375 e.p. gasoline...	7.75 – 8.25	7.75 – 8.00	7.75 – 8.00
NORTH TEXAS			
56-58 450 e.p. gasoline...	6.375– 6.625	6.375– 6.625	6.50 – 6.625
58-60 450 e.p. gasoline...	6.375– 6.625	6.375– 6.625	6.50 – 6.75
58-60 U.S. Motor 437 e.p.	6.50 – 6.75	6.50 – 6.75	6.625– 6.875
60-62 400 e.p. gasoline...	6.875– 7.25	7.00 – 7.25	7.00 – 7.25
64-66 390 e.p. gasoline...	7.50	7.375– 7.625	7.375– 7.625
64-66 375 e.p. gasoline...	7.75	7.75 – 8.00	7.75 – 8.00
68-70 350-360 e.p. gasoline	8.00 – 8.25	8.125– 8.375	8.00 – 8.25
****WEST TEXAS (F.o.b. West Texas refinery, for unrestricted shipment)**			
50-52 naphtha.....	5.75 – 6.00	6.00	6.00
58-60 437 e.p. gasoline...	6.25 – 6.50	6.25 – 6.50	6.25 – 6.625
58-60 U.S. Motor 437 e.p. gasoline.....	6.50 – 6.75	6.50 – 6.75	6.50 – 6.75
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
58-60 U.S. Motor gasoline	7.25	7.25	7.25
ARKANSAS (Ark., N. La. and Miss. destination)			
58-60 U.S. Motor 437 e.p.	7.25	7.25	7.25
CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)			
54-58 U.S. Motor 437 e.p.	‡9.50 –10.50	9.50 –10.50	‡9.50 –10.00
58-61 375-400 e.p. gasoline	10.50 –11.50	10.50 –11.50	10.50 –11.00
42-45 Engine Distillate 445-480 e.p.....	7.50 – 8.00	7.50 – 8.00	7.50 – 8.00

‡For outside state shipment price was 7.25–8.25c on Oct. 21, 7.00–8.00c on Oct. 28 and Nov. 4, 6.50–7.25c on Nov. 11, 18 and 25, 7.00–7.75 on Dec. 2, 9, and 16.

NATURAL GASOLINE

(Note: End point of all grades, not over 375 F. Corrosion test adopted Oct. 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA			
Grade AA, 80-87.9, 90% Recovery.....	6.375	6.375	6.625
Grade A, 72-79.9, 90% Recovery.....	6.625	6.625	6.75 – 6.875
Grade BB, 84-92, 85% Recovery.....	5.75 – 5.875	5.875– 6.00	6.125– 6.25
Grade B, 76-83.9, 85% Recovery.....	5.75 – 5.875	5.875– 6.00	6.125– 6.25
Grade C, 80-92, 78% Recovery.....	5.75	5.75	6.125– 6.25
NORTH TEXAS (F. o. b. Breckenridge)			
Grade AA, 80-87.9, 90% Recovery.....	6.375	6.375	6.625
Grade A, 72-79.9, 90% Recovery.....	6.625	6.625	6.75 – 6.875
Grade BB, 84-92, 85% Recovery.....	5.75 – 5.875	6.00 – 6.125	6.125– 6.25
Grade B, 76-83.9, 85% Recovery.....	5.75 – 5.875	6.00 – 6.125	6.125– 6.25
Grade C, 80-92, 78% Recovery.....	5.75	5.875	6.125– 6.25

†Prices nominal ††Only one refiner quotin‡ *Quotations only

NORTH LOUISIANA (F. o. b. Monroe District)	Prices Dec. 16	Prices Dec. 9	Prices Dec. 2
Grade AA.....	†6.75	†6.75	†6.875
Grade BB.....	†6.25	†6.25	†6.50
Grade C.....	†6.25	†6.25	†6.50
CALIFORNIA			
75-85, 375-390 e.p. blend	8.50 – 8.75	8.50 – 9.00	8.25 – 8.75

BURNING OILS

PENNSYLVANIA			
45 w.w. kerosene.....	6.125– 6.50	6.25 – 6.75	6.375– 6.75
46 w.w. kerosene.....	6.50 – 6.75	6.625– 7.00	6.75 – 7.25
47 w.w. kerosene.....	6.75 – 7.25	6.75 – 7.25	7.00 – 7.50
300 mineral seal.....	7.00 – 7.75	7.00 – 7.75	7.00 – 7.75
OKLAHOMA			
41-43 w.w. kerosene.....	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75
42-44 w.w. kerosene.....	4.50 – 5.00	4.50 – 5.25	4.625– 5.25
KANSAS (F. O. B. refinery Kansas destination)			
41-43 w.w. kerosene.....	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
42-44 w.w. kerosene.....	5.00 – 5.25	5.00 – 5.50	5.00 – 5.50
NORTH TEXAS			
40-42 w.w. kerosene.....	4.00	4.00	4.00 – 4.25
41-43 w.w. kerosene.....	4.00 – 4.25	4.00 – 4.25	4.25 – 4.375
NORTH LOUISIANA (N. La., Ark. and Miss. destination)			
41-43 w.w. kerosene.....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.375
42-44 w.w. kerosene.....	5.25 – 5.50	5.25 – 5.50	5.50
ARKANSAS (Ark., N. La. and Miss. destination)			
42-44 w.w. kerosene.....	5.50	5.25 – 5.50	5.50
CALIFORNIA			
38-40 w.w. kerosene.....	5.50 – 6.00	5.50 – 6.00	5.00 – 6.00

NEUTRAL OIL

PENNSYLVANIA			
Vis.		**(Viscosity at 70°F.)**	
200 No. 3 Assoc. Filt.....	24.50 –27.00	24.50 –27.00	24.50 –27.00
180 No. 3 Assoc. Filt.....	19.50 –23.00	19.50 –23.00	19.50 –23.00
150 No. 3 Assoc. Filt.....	15.50 –18.00	15.50 –18.00	15.50 –18.00
		(Non Viscous)	
34 Grav. 330-340 Flash..	7.00 – 7.50	7.25 – 7.75	7.25 – 7.75
****OKLAHOMA**			
Vis. Color		**(Viscosity at 100°F.)**	
100—No. 2.....	6.00 – 7.50	6.00 – 7.00	6.00 – 7.00
150—No. 3.....	7.50 – 8.50	7.50 – 8.00	7.50 – 8.00
150—No. 4.....	6.75 – 8.00	6.75 – 7.50	6.75 – 7.50
180—No. 3.....	9.00 –10.00	9.00 – 9.50	9.00 – 9.50
180—No. 4.....	8.75 – 9.50	8.75 – 9.00	8.75 – 9.00
180—No. 5.....	8.50 – 9.00	8.50 – 8.75	8.50 – 8.75
200—No. 3.....	10.00 –12.00	10.00 –12.00	9.75 –10.00
200—No. 4.....	9.00 –11.00	9.00 –11.00	9.00 – 9.75
200—No. 5.....	9.50 –11.00	9.50 –11.00	9.00 – 9.25
220—No. 3.....	12.50 –13.50	12.50 –13.50	12.50 –13.50
220—No. 4.....	12.00 –12.50	12.00 –12.50	12.00 –12.50
220—No. 5.....	11.00 –12.00	11.00 –12.00	11.00 –12.00
240—No. 3.....	13.00 –16.00	13.00 –16.00	13.00 –13.50
240—No. 4.....	12.00 –13.75	12.00 –13.00	12.00 –13.00
240—No. 5.....	11.00 –13.00	11.00 –13.00	11.00 –12.50
280—No. 3.....	15.50 –17.00	15.00 –16.00	14.00 –16.00
280—No. 4.....	14.00 –17.00	13.00 –16.00	12.50 –15.00
280—No. 5.....	12.75 –14.75	12.00 –14.00	12.00 –14.00

**Represents Both Sales and Quotations.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, F. O. B. refinery except where $ is shown

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL

Vis.	Color	Prices Dec. 16	Prices Dec. 9	Prices Dec. 2
		(Viscosity at 100°F., pour test 0)		
100	No. 2 Pale	6.00 – 7.00	6.00 – 7.00	6.00 – 7.00
200	No. 3 Pale	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
300	No. 3 Pale	10.00 –10.75	10.00 –10.75	10.00 –10.75
500	No. 3½ Pale	11.50 –12.00	11.50 –12.00	11.50 –12.00
750	No. 4 Pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
200	No. 5½ Red Oil	8.00 – 8.75	8.00 – 8.75	8.00 – 8.75
300	No. 5½ Red Oil	9.00 –10.00	9.00 –10.00	9.00 –10.00
500	No. 6 Red Oil	9.50 –10.00	9.50 –10.00	9.50 –10.00
750	No. 6 Red Oil	11.50 –12.00	11.50 –12.00	11.50 –12.00

CALIFORNIA

Vis.	Color			
		(Viscosity at 100°F.)		
100	No. 3	9.50 –10.00	9.50 –10.00	9.50 –10.00
200	No. 3	11.50	11.50	11.50
300	No. 3	13.00	13.00	13.00
450	No. 3	15.50	15.50	15.50
550	No. 3	16.50	16.50	16.50
600	No. 3	17.00	17.00	17.00
200	No. 5	11.00	11.00	11.00
300	No. 5	12.00	12.00	12.00
400	No. 5	14.00	14.00	14.00
500	No. 5	15.00	15.00	15.00
600	No. 5	16.00	16.00	16.00
700	No. 7	18.00	18.00	18.00

CYLINDER STOCKS

**OKLAHOMA

190-200 Vis. D at 210° Brt. St.	42.00	42.00	40.00 –42.00
150-160 Vis. D at 210° Brt. St.	37.00	37.00	36.00 –37.00
150-160 Vis. E 210° Brt. St.	35.00 –36.00	35.00 –36.00	33.00 –35.00
600 St. Ref. Olive Green	9.00 –15.00	9.00 –17.00	9.00 –17.00
600 St. Ref. Dark Green	9.00 –11.00	9.00 –11.00	9.00 –11.00
Black Oil	5.00	5.00	5.00

PENNSYLVANIA (A. S. T. M. Tests)

600 Steam Refined, filterable	25.00 –26.00	26.00 –27.00	27.00 –28.00
650 Steam Refined	30.00 –31.00	30.50 –31.50	30.50 –31.50
600 Flash	32.50 –34.50	32.50 –34.50	32.50 –34.50
625 Flash	36.00 –37.00	36.00 –37.00	36.00 –37.00
600 Warren E	32.00 –32.50	32.00 –32.50	32.00 –32.50
600 Oil City E	30.50 –32.00	30.50 –32.00	31.00 –32.00
600 D Filtered	36.00 –37.00	36.50 –37.00	36.50 –37.00
Cold Test Stock, 40-50 p. p., 140-150 vis. at 210° 540-550 flash, No. 8 color	45.00 –47.00	‡46.00 –47.50	47.50 –49.00
40-50 p.p., 140-150 vis. at 210°, 540-550 flash, No. 6-6½ color diluted	43.00 –45.00	44.00 –46.00	46.50 –47.00

‡Lower pour test stock quoted 1 to 2 cents higher.

WAX

PENNSYLVANIA (Per pound, New York)

¶22-124 white crude scale, a.m.p.	3.00 – 3.125	3.125– 3.25	3.125– 3.375
¶24-126 white crude scale, a.m.p.	3.00 – 3.125	3.125– 3.25	3.25 – 3.50

**OKLAHOMA

¶24-126 White Crude Scale, a. m. p.	3.00	3.00	3.00 – 3.125

CALIFORNIA

¶White crude scale, per pound, ton lots, a.m.p.	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	4.50 – 5.00	4.75 – 5.00	4.875– 5.25
30-34 fuel oil	4.50 – 4.75	4.625– 4.75	4.75 – 5.00
28-32 fuel oil	4.50 – 4.75	4.625– 4.75	4.75 – 5.00

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA

	Prices Dec. 16	Prices Dec. 9	Prices Dec. 2
38-40 straw distillate	3.75	3.75 – 4.00	3.75 – 4.00
36-38 straw distillate	3.625– 3.75	3.75	3.75
32-36 straw gas oil	3.00 – 3.25	3.00 – 3.125	2.875– 3.125
32-36 straw gas oil zero	3.375– 3.50	3.25 – 3.50	3.25 – 3.375
32-36 dark gas oil	2.875– 3.125	2.875– 3.00	2.875– 3.00
32-36 dark gas oil zero	3.25 – 3.375	3.25 – 3.375	3.125– 3.375
28-30 zero fuel oil	†$1.20 – 1.25	$1.20	$1.15 – 1.20
28-30 fuel oil (in bbls.)	$1.10 – 1.175	$1.10 – 1.15	$1.05 – 1.10
26-28 fuel oil (in bbls.)	$0.975– 1.05	$0.95 – 1.05	$0.90 – 1.00
24-26 fuel oil (in bbls.)	†$0.95 – 1.00	$0.90 – 1.00	$0.85 – 0.95
22-26 fuel oil (in bbls.)	$0.85 – 0.90	$0.80 – 0.90	$0.80 – 0.90
18-22 fuel oil (in bbls.)	$0.75 – 0.80	$0.75 – 0.775	$0.70 – 0.775
16-20 fuel oil (in bbls.)	$0.65 – 0.80	$0.65 – 0.80	$0.65 – 0.75
14-16 fuel oil (in bbls.)	$0.65 – 0.80	$0.65 – 0.80	$0.65 – 0.75

KANSAS (F. O. B. refinery Kansas destination)

38-40 straw distillate	4.00 – 4.25	4.00 – 4.125	4.00 – 4.25
36-38 straw distillate	3.875– 4.00	4.00	4.00
32-36 straw gas oil	3.375– 3.50	3.25 – 3.50	3.125– 3.50
18-22 fuel oil	$0.825– 0.90	$0.80 – 0.90	$0.75 – 0.80
10-14 fuel oil	$0.75 – 0.825	$0.775– 0.825	$0.725– 0.75

NORTH TEXAS

38-40 straw distillate	3.50 – 3.75	3.625– 3.75	3.75
38-40 p.w.treated distillate	3.75 – 3.875	3.75 – 4.00	3.75 – 4.00
32-36 gas oil, cracked	2.75 – 3.125	2.75 – 3.00	2.875– 3.00
32-36 St. reduced gas oil	2.50 – 2.75	2.625– 2.75	2.50 – 2.75
24-26 fuel oil (in bbls.)	$0.75	$0.725– 0.75	$0.725– 0.75
20-24 fuel oil	$0.625– 0.70	$0.60 – 0.70	$0.60 – 0.675
18-22 fuel oil	$0.65	$0.60 – 0.65	$0.575– 0.65

**WEST TEXAS (F. o. b. West Texas refinery, for unrestricted shipment)

34-38 gas oil	2.50 – 2.75	2.625– 2.75	2.625– 2.75
30-32 gas oil	2.50 – 2.75	2.375– 2.75	2.50 – 2.75
28-30 zero gas oil	3.00 – 3.125	3.00	2.50 – 2.875
18-22 fuel oil	$0.60 – 0.70	$0.575– 0.70	$0.525– 0.65

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	3.50	3.50	3.50
32-36 gas oil, straw	3.50	3.50	3.50
14-16 fuel oil (in bbls.)	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.85

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	3.50	3.50	3.25 – 3.50
32-36 dark gas oil	3.50	3.50	3.25 – 3.50
28-30 gas oil	3.25	3.25	3.25
14-16 fuel oil	$0.75 – 0.85	$0.75 – 0.85	$0.75 – 0.85

CALIFORNIA (F. o. b. San Joaquin Valley. At San Francisco 4c per bbl. more)

14-18 fuel oil (per bbl.)	$0.40 –$0.60	$0.40 –$0.60	$0.45 –$0.60
14-18 Bunker oil (per bbl.)	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
30-34 gas oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90
27 Plus Diesel oil (per bbl.)	$0.80 –$0.90	$0.80 –$0.90	$0.80 –$0.90

PETROLATUMS

PENNSYLVANIA (In barrels, carload lots, f. o. b. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.

Snow White	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
Lily White	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Cream White	6.75 – 7.00	6.75 – 7.00	6.75 – 7.00
Light Amber	3.75	3.75	3.75
Amber	3.50	3.50	3.50
Red	3.25	3.25	3.25

PETROLEUM COKE

**OKLAHOMA

(Per ton in car lots)

Lump	$4.50 – 5.00	$4.50 – 5.00	$4.50 – 5.00
Still run	$3.00	$3.00	$3.00
Breeze	$2.00	$2.00	$2.00

**Represents Both Sales and Quotations.

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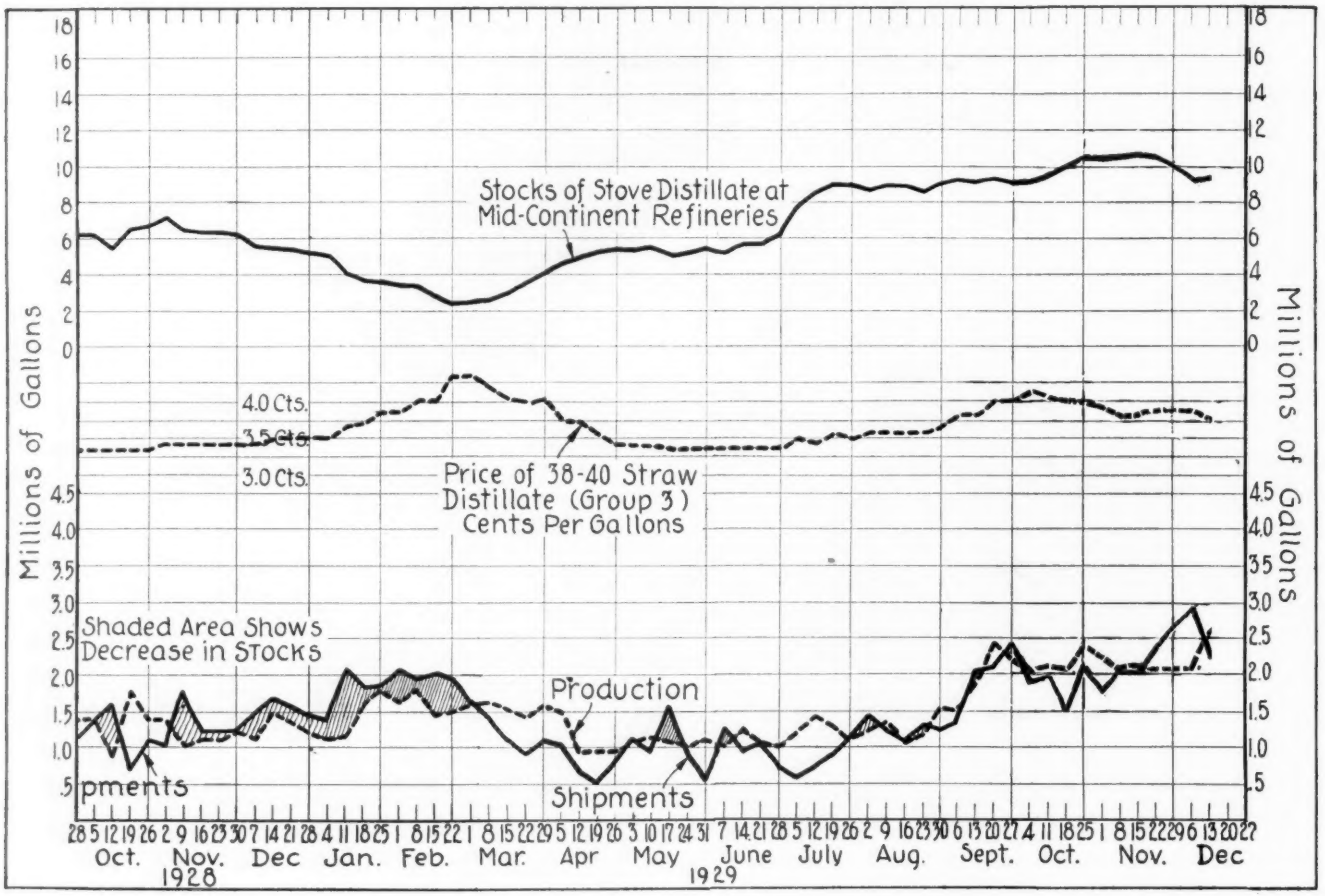
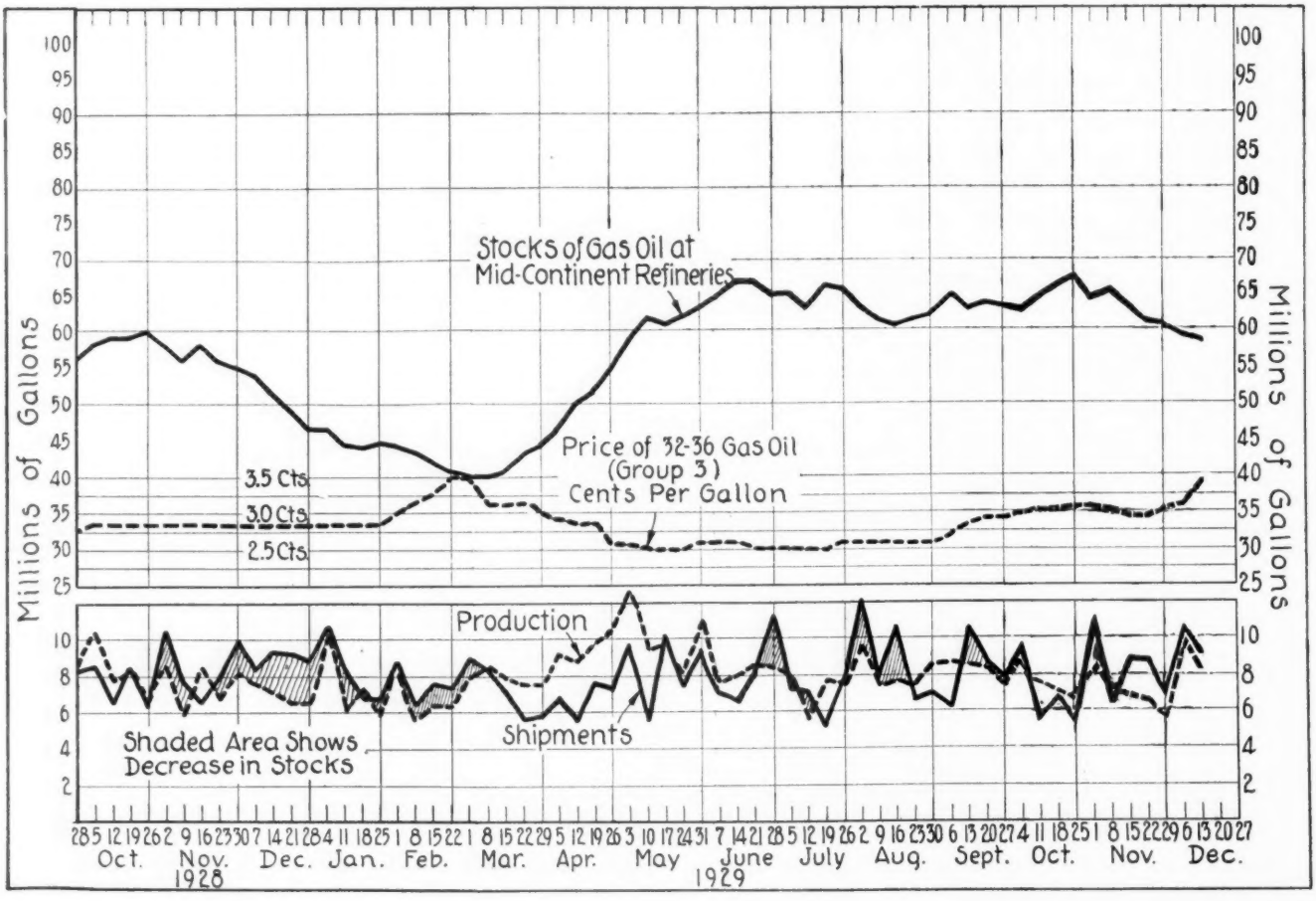

Millions of Gallons
Millions of Gallons
Stocks of Stove Distillate at Mid-Continent Refineries
4.0 Cts.
3.5 Cts.
3.0 Cts.
Price of 38-40 Straw Distillate (Group 3) Cents Per Gallons
Shaded Area Shows Decrease in Stocks
Production
Shipments
Oct. Nov. Dec Jan. Feb. Mar. Apr May June July Aug. Sept. Oct. Nov. Dec
1928
1929


Millions of Gallons
Millions of Gallons
Stocks of Gas Oil at Mid-Continent Refineries
3.5 Cts.
3.0 Cts.
2.5 Cts.
Price of 32-36 Gas Oil (Group 3) Cents Per Gallon
Production
Shipments
Shaded Area Shows Decrease in Stocks
Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
1928
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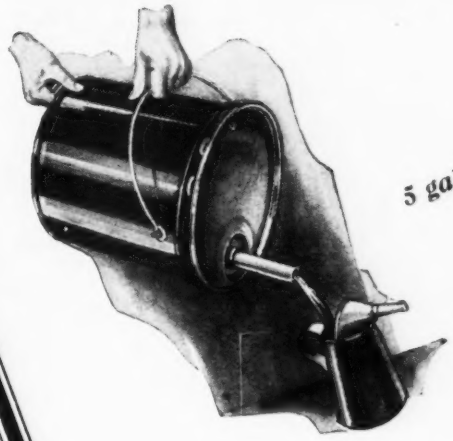


5 gallon POR-PAIL

Revolutionizing 5 gallon oil sales with this modern container .... the Por-Pail. It pours smoothly, and accurately without gulping and drains the contents to the bottom. When emptied, off comes the lug cover, making a steel pail of Permanent Utility and diversified convenience for the farm, home, and garage. Por-Pail is a real merchandising aid .... your letterhead brings a sample.

55 gallon drum

The All-American oil drum backed by unconditional guarantee and manufactured in the ultra-modern manner by BENETCO, the STEEL CONTAINER *Specialists* of a quarter-century. Specified steel .... corrugations and rolling hoops like a stonewall .... baked on enamel. A handsome product in spite of its sturdiness.

BENETCO
STEEL
CONTAINER
Specialists

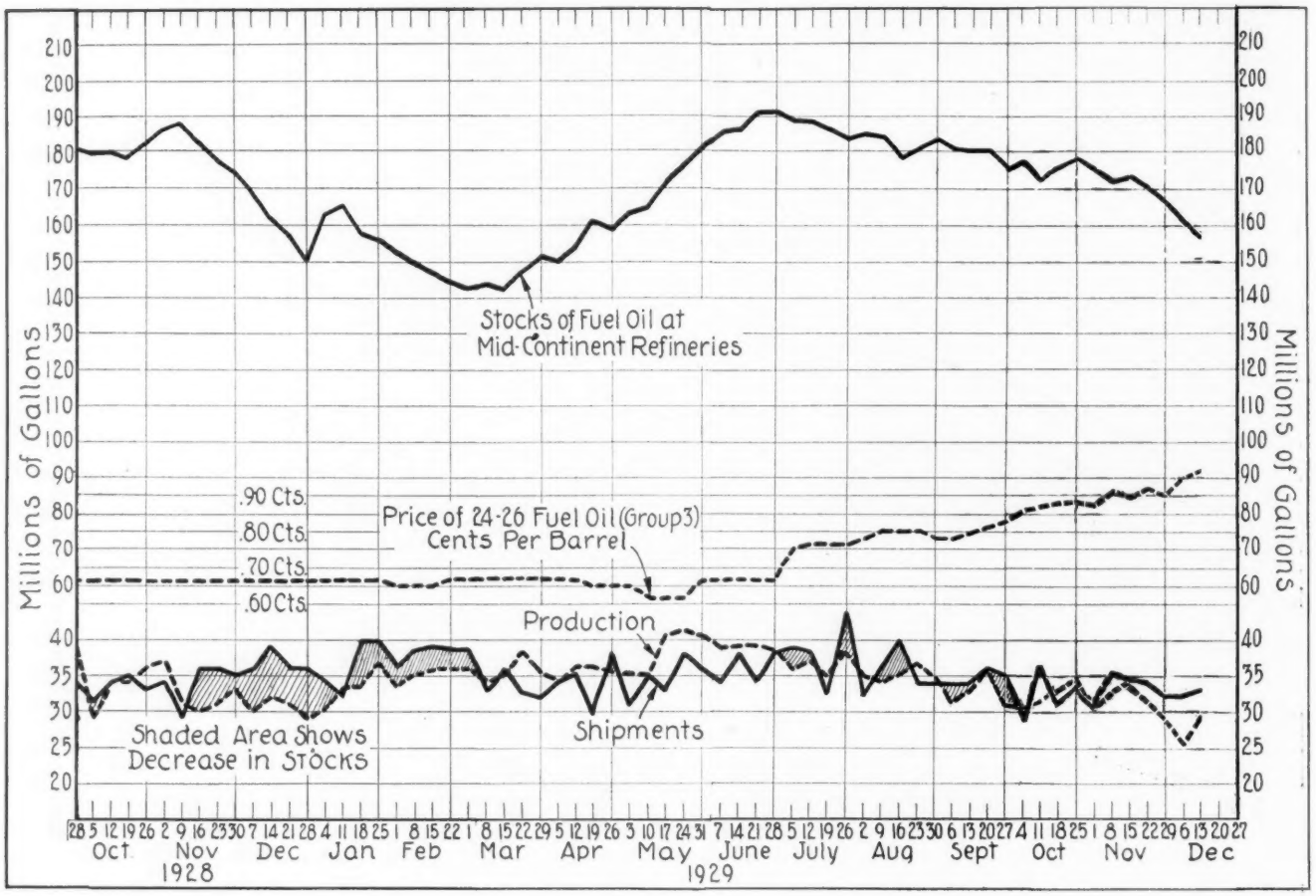
WILSON & BENNETT MFG. CO.
6520 S. Menard Ave.
CHICAGO

39 Cortlandt St.
NEW YORK

sales representatives in principal cities

Barometer of Mid-Continent Refinery Market—Week Ending December 13

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Millions of Gallons
Millions of Gallons
Stocks of Fuel Oil at Mid-Continent Refineries
.90 Cts.
.80 Cts.
.70 Cts.
.60 Cts.
Price of 24-26 Fuel Oil (Group 3) Cents Per Barrel
Production
Shipments
Shaded Area Shows Decrease in Stocks
Oct Nov Dec Jan Feb Mar Apr May June July Aug Sept Oct Nov Dec
1928
1929

California Refinery Market

Large 1930 Contracts Under Negotiation

LOS ANGELES, Dec. 14

MARKETERS on the Pacific Coast continued to report a better tone in marketing conditions last week and they were optimistic as regards sales during the coming year.

Negotiation of contract business over 1930 has engaged the attention of executives for the past few weeks, and according to reports several companies have obtained some large orders.

Inquiries from eastern buyers for California goods were reported by a number of local refiners, but offered prices still were too low to tempt even those with crowded storage.

One cargo of gas oil was reported sold at $0.80 per barrel for delivery to the Atlantic seaboard.

Quotations on export gasoline ranged from 6.25 to 7 cents; prices offered by buyers varied from 5.75 to 6 cents. At present, however, high tanker rates are the principal cause for the dearth of spot sales, according to most traders.

Demand for all commodities, except fuel oils and neutral oils, picked up in the California domestic market during week ended Dec. 14.

U. S. Motor for shipment out of the state sold freely at prices ranging from 7 to 7.50 cents per gallon. Some of this goods, about a car a day, was reported moving at 6.75 cents but this figure was not representative of the general market.

Motor fuel for shipment within the state moved at from 9.50 to 10.50 cents per gallon, without tax, but there was a substantial dribble "out the back door," so to speak, at prices varying from 8.50 to 9 cents. No company openly quoted these latter prices but an abundance of cheap gasoline in the local reseller's market indicated that a "leak" existed.

The minimum quotation for natural gasoline was 8.50 cents, and it was not thought that many refiners were shading this price. Curtailment of crude oil production with the consequent reduction in volume of the wet gas produced has resulted in a noticeable scarcity of good absorption gasoline.

The volume of fuel oil sold during the past month has diminished considerably although comparatively large export trade has tended to balance the loss suffered in domestic sales. A greater tendency toward the use of natural gas as a fuel has resulted in decreased fuel oil sales. Quotations for fuel oil ranged from $0.40 to $0.60 although the majority of sales made during the past week were made at prices nearer the lower figure.

Correction

Information arriving too late to include in the complete seaboard market table of this issue indicates that price of 30-34 gas oil in Pacific export market as of Dec. 16 should be $0.80 to $1.00 per barrel, instead of $0.85 to $1.00 as published. Prices in the table will be corrected in the issue of Dec. 25.

Pennsylvania Market

Prices Show Further Recessions

CLEVELAND, Dec. 14.—Prices of several commodities in western Pennsylvania markets showed further recessions in the week ended Dec. 14. Reports from sellers generally as to the condition of the market varied considerably although those who asserted they were enjoying satisfactory business were in the minority.

Gasoline, kerosene, fuel oil, steam refined stock and bright stock all were quoted lower at the end of the week. Neutral oils, in spite of the fact that they ran into another of their "periodical states of lethargy," as one seller expressed it, showed strong resistance to the trend of the market generally.

The element of pessimism, however, was almost nil. Most of the trade reported they had been expecting lower prices in December and since they were concentrating their efforts on getting 1930 contracts for various commodities settled, they were little concerned over the spot open market situation.

Gasoline quotations continued to cover wide ranges. U. S. Motor was freely offered in some districts at 8 cents. The majority of quotations for this grade ranged only up to 8.50 cents but one large refiner continued to ask 9 cents and reported occasional orders booked at this figure.

The low prices for the higher gravity gasolines were down 0.125 to 0.25 cent with 64-66, 390 e.p. offered at 8.50 cents and 68-70, 350-360 e.p. at 9.625 cents in some districts.

Considerable surplus kerosene appeared in the market last week. Several large lots of 45 water white were seeking buyers at 6.125 cents, 0.125 cent under the previous week's low price, with reports that this grade had sold in some instances at 6 cents. Sales at this figure, however, could not be confirmed.

Most of the activity in fuel oil centered around deferred shipment buying. Spot demand was relatively quiet. The sale of 20 cars of 36-40 straw color oil at 4.50 cents for shipment over the balance of December and January was reported late in the week. Thereafter spot goods were offered at this price. Zero cold test oils, in spite of their relative scarcity, were not commanding much of a premium.

Both light and dark bright stock were offered 1 cent lower at 45 cents and 43 cents, respectively. Filterable 600 steam refined also was down 1 cent a gallon at 25 cents. Prices for filtered cylinder oils were unchanged; these oils were offered sparingly.

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Eastern Domestic Markets

Gasoline Activity Confined to Contracts

Staff Special
NEW YORK, Dec. 14

JOBBERS bought gasoline sparingly the past week. Prices in all districts were unchanged although there was some improvement reported late in the week in New England. Burning oils continued in good demand and prices for gas oil were higher at New York.

Probably the most interesting feature of the market was the advance mentioned last week of 0.50 cent in gasoline prices by a Philadelphia refiner which makes its prices 9.50 cents f.o.b. plant at Philadelphia and 10.75 cents, delivered, at Providence.

The Philadelphia trade expressed various opinions as to why this advance was made, the most prevalent being the company's stocks were in good shape and it wished to retire temporarily from the spot market. They did not feel that the market warranted an increase and, consequently, none of them followed suit.

On the other hand the company which made the advance stated the market did warrant it, and its opinion was that it would be but a matter of a few days until the general market would be near that figure. No other companies shipping into Providence territory advanced their prices.

Demand for gasoline has been only fair at all points on the east coast. Jobbers have been ordering only the material needed, the volume of which has not been large, since contracts have kept them well supplied. Responsibility for this inactivity has been placed on the weather which has been anything but conducive to motoring.

Toward the latter part of the week Boston sellers reported an increase in the number of orders and also that there were fewer reports of price cutting. The majority of companies at Boston and Providence continued to quote 10.25 cents, delivered.

There was report of an extremely low sale, having been made for shipment into New England but the price was so far out of line that the Boston informant doubted its authenticity. The goods were supposed to have moved from Bayonne. No check of the sale could be obtained either from Bayonne or Boston sellers.

California gasoline prices were unchanged at 9 cents at all points. Most suppliers reported having sufficient goods in storage. One or two believed there would be little spot stuff moved from the west coast in the near future as a result of the lower rates on clean boats. Several in close touch with the tanker market stated that a boat was available at $0.95 a barrel but that the owner had found no takers. Early in the week clean ships were being rated as high as $1.05 per barrel for intercoastal movement.

Kerosene was in good demand at all points but shipments continued to be hampered by low prices in Pennsylvania. An order at Boston which ordinarily would be filled at New York, was placed this week with a Pennsylvania refiner at 6.125 cents. This business would figure approximately 1 cent per gallon cheaper than it could be moved from New York on a delivered basis.

One refiner who has been out of the kerosene market at Boston, expects to begin marketing 41-43 water white grade some time in January. He expects to sell it 0.5 cent under the delivered price from Pennsylvania.

Heavy oils were in good demand and the price for 28-34 gas oil at New York was higher early in the week. One or two suppliers were obtaining 5 cents for spot shipment.

Gulf Coast Markets

Domestic U. S. Motor Offered Lower

Staff Special
NEW YORK, Dec. 14

THE purchase of a cargo of gasoline jointly by two French buyers brought to the Gulf market its only activity during the past week. A buyer in the market last week withdrew and there was an unconfirmed report of a cargo of lube oils having been sold. Prices for all commodities for export were unchanged; there was a reduction in U. S. Motor prices for domestic shipment.

The two foreign buyers purchased approximately 70,000 barrels of 64-66, 375 end point gasoline and U. S. Motor, the bulk of the shipment being the higher gravity stuff. This business was taken by a leading Independent refiner who is to make shipment early in January from the Gulf.

The larger of the two inquiries which approximated 50,000 barrels of 64-66, came from an account that was in the market the week before but which withdrew its inquiry. The company which took the business was inclined to believe the foreign concern withdrew to take advantage of a better offer but returned to the American market after failing to obtain the goods elsewhere.

Around the middle of the week, the New York broker who was negotiating with a buyer on the Continent for a gasoline cargo, reported the buyer had withdrawn his inquiry. The broker was seeking approximately 70,000 barrels of 64-66, 390 end point gasoline for January or February lifting.

The trade had no definite information at hand concerning foreign contracts for next year although it has been reported that a number of present contracts will expire around Jan. 1. One student of the market offered the opinion that there would be less California gasoline sold for export to the United Kingdom and the Continent next year. He based his opinion on the proximity and availability of Venezuela gasoline and also on the fact that numerous domestic outlets for California goods have been established on the east coast which will take care of a good portion of the west coast refiners' output.

There has been no change and no activity, either domestic or export, in heavy oils. One buyer believed prices for low sulfur gas oil could be shaded but refiners' quotations were unchanged. Gas oil with high sulfur content has been offered at 3.625 cents, f.o.b. Louisiana terminal, it was reported. This offer was made firm for export.

There has been no spot business at the Gulf for domestic shipment for some weeks. All commodities have enjoyed fairly good movement on contract to east coast concerns but spot business has been out of the picture. Some suppliers' ideas of the market for U. S. Motor were lower, however, and as a result prices were down an 0.125 cent the past week. Saturday the majority of opinions were 7.375 to 7.50 cents although there were higher and lower ones expressed.

RICHMOND, Va., Dec. 14.—A charter has been granted C. M. Ball and Company, Inc., of Richmond, with maximum capital of $10,000, to conduct a filling and service station. C. M. Ball, of Richmond, is president.

Wax Markets

Scale Wax Higher; Refined Down

NEW YORK, Dec. 14.—The end of the third week in December found crude scale waxes higher in price and fully refined grades, in a majority of cases, lower. The former grades were higher by an 0.125 cent and the latter, on the lows of price ranges, were 0.125 to 0.25 cent lower. Demand for crude scale waxes was a trifle more spirited, the trade reported, while orders for fully refined grades were scarce.

White crude scale, both the 122-124 A.m.p. and 124-126 A.m.p. grades, was generally quoted at 3.125 cents. Several sales were made at that figure and few refiners were willing to accept less although some sales were made at lower prices.

Early in the week a sale for export was reported on white crude scale, made on a c.i.f. basis, that netted about 2.96 cents, New York. The goods were in the hands of a broker, it was reported, who had purchased some time ago low enough to enable him to make a profit on the transaction.

The foregoing sale contrasts with one made later in the week, also on a delivered basis, to the Continent, which figured 3.125 cents, New York. The trade believed 3 cents could be done at New Orleans, but the amount of goods available at that price at New York was negligible.

Yellow crude scale prices moved up, being quoted at 3 to 3.125 cents. A New York dealer reported he had encountered some trouble in obtaining yellow goods and that three or four refiners with whom he did business were sold up and out of the market until Feb. 1. Only small lots were available at the foregoing prices; demand however was not heavy.

Prices for the fully refined grades ranged from 4 to 4.125 cents for 123-125 A.m.p., to the range of 6.125 to 6.375 cents, for 135-137 A.m.p. Reductions of 0.125 to 0.25 cent were made on the intermediate grades with the exception of 130-132 A.m.p. which was unchanged at 5 to 5.25 cents.

It was reported there had been quite a heavy movement of 125-127 A.m.p. to Mexico the past week. An unconfirmed report said that the Mexican government would raise the import duty on wax about 30 per cent in the near future, and that Mexican buyers, where their storage permitted, were replenishing their stocks before the rate was increased. The bulk of 128-130 A.m.p. fully refined wax, according to reports, moved at 4.375 cents, although sales above and below this figure were reported. One trader said this grade was available at the Gulf at 3.20 cents a pound.

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NAPHTHA — GAS — OILS
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Complete Seaboard Market

(Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of quotations.)

U. S. MOTOR GASOLINE	Dec. 16	Dec. 9	Dec. 2
New York harbor	8.75	8.75	8.75
Portland district	*10.75	*10.75	*10.75
Boston district	*10.25	*10.25	*10.25
Providence district	*10.25	*10.25	*10.25
Philadelphia district	8.75 – 9.00	8.75 – 9.00	8.75 – 9.00
Baltimore district	9.00	9.00	9.00
Norfolk district	9.00	9.00	9.00
Charleston district	9.00	9.00	9.00
Savannah district	9.00	9.00	9.00
Jacksonville district	9.00	9.00	9.00
CALIFORNIA, U. S. MOTOR GASOLINE			
New York harbor	9.00	9.00	9.00
Philadelphia district	9.00	9.00	9.00
Baltimore district	9.00	9.00	9.00
WATER WHITE KEROSENE			
New York harbor	7.75	7.75	7.75
Philadelphia district	7.75 – 8.00	7.75 – 8.00	7.75 – 8.00
Baltimore district	7.75	7.75	7.75
GAS OIL: 28-34 Gravity			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75
Boston district	4.75 – 5.25	4.75 – 5.25	4.75 – 5.00
FURNACE OIL: 36-40 Gravity			
New York harbor	6.00 – 6.25	6.00 – 6.25	6.00 – 6.50
Boston district	6.00 – 6.25	6.00 – 6.25	6.00 – 6.50
GRADE C BUNKER OIL†			
New York Harbor	$1.05	$1.05	$1.05
Boston district	$1.05	$1.05	$1.05
DIESEL OIL			
New York harbor	$2.08 –$2.10	$2.00 –$2.10	$2.00 –$2.10
MEDICINAL OILS, RUSSIAN			
.885-890 s.g. 320-330 vis.	$0.82 –$0.97	$0.82 –$0.97	$0.82 –$0.97
.870-875 s.g. 145-155 vis.	$0.74 –$0.89	$0.74 –$0.89	$0.74 –$0.89

Note: Above gasoline prices do not include inspection tax levied in some states.
*Minimum delivered. †Lighterage 5c per bbl. additional.

New York Export Market

(Lubricating oils are per gal. in bbls.)

	Dec. 16	Dec. 9	Dec. 2
CYLINDER OILS (Pennsylvania Products)			
Bright stock, dark	51.00 –53.00	51.00 –53.00	53.00 –55.00
600 D filtered	44.00 –46.00	44.00 –45.00	43.00 –45.00
600 Warren E filtered	38.00 –41.00	38.00 –41.00	38.00 –41.00
600 s.r. unfiltered	32.50 –34.00	33.00 –35.00	33.00 –35.00
650 s.r. unfiltered	37.50 –40.00	38.00 –40.00	38.00 –40.00
600 flash, s.r.	40.00 –42.00	40.00 –42.00	40.00 –42.00
630 flash, s.r.	42.50 –45.00	43.00 –46.00	43.00 –46.00
RED ENGINE OILS (Vis. 100°)			
300 vis. No. 6½ color	20.00 –21.00	20.00 –21.00	20.00 –21.00
250 vis. No. 6 color	18.00 –20.00	18.00 –20.00	18.00 –20.00
200 vis. No. 6 color	16.00 –17.00	16.00 –17.00	16.00 –17.00
PALE ENGINE OILS (Vis. 100°)			
230 vis. No. 3¾ color	22.00 –24.00	22.00 –24.00	22.00 –24.00
180 vis. No. 3¼ color	18.00 –20.00	18.00 –20.00	18.00 –20.00
100 vis. No. 2¼ color	16.00	16.00	16.00
MOTOR OILS (Vis. 100°)			
600 vis. No. 7 color	30.00 –32.00	30.00 –32.00	30.00 –32.00
500 vis. No. 6½ color	28.00 –29.00	28.00 –29.00	28.00 –29.00
400 vis. No. 7¼ color	26.00 –27.00	26.00 –27.00	26.00 –27.00
300 vis. No. 6 color	23.00 –24.00	23.00 –24.00	23.00 –24.00
200 vis. No. 6 color	21.00 –22.00	21.00 –22.00	21.00 –22.00
MEDICINAL OILS			
.875-880 s.g.	$0.76 –$0.91	$0.76 –$0.91	$0.76 –$0.91
.860-.865 s.g.	$0.58 –$0.73	$0.58 –$0.73	$0.58 –$0.73
WAXES (In cents per pound, f.a.s. carload lots)			
WHITE CRUDE SCALE (In barrels)			
122-124 A.m.p.	3.125	3.00 – 3.125	3.125– 3.25
124-126 A.m.p.	3.125	3.00 – 3.125	3.125– 3.25
FULLY REFINED (In burlap bags)			
123-125 A.m.p. Phila.	4.00 – 4.125	4.125– 4.25	4.125– 4.25
125-127 A.m.p.	4.00 – 4.25	4.25 – 4.375	4.25 – 4.375
128-130 A.m.p.	4.25 – 4.50	4.50 – 4.625	4.50 – 4.625
130-132 A.m.p.	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
133-135 A.m.p.	5.50 – 5.75	5.75 – 6.00	5.75 – 6.00
135-137 A.m.p.	6.125– 6.375	6.25 – 6.375	6.25 – 6.375
YELLOW CRUDE SCALE			
124-126 A.m.p.	3.00 – 3.125	3.00	3.00 – 3.125

Gulf Export Market

(Prices are f. o. b. Gulf oil terminals in Texas and Louisiana, shipments of 20,000 bbls. or more unless otherwise noted and for export shipment only).

GASOLINE	Dec. 16	Dec. 9	Dec. 2
U. S. Motor	8.50	8.50	8.50
60-62, 400 e.p.	9.50	9.50	9.50
61-63, 390 e.p.	9.75	9.75	9.75
64-66, 375 e.p.	10.00	10.00	10.00
U. S. Motor, cases (cargoes)	$1.85	$1.85	$1.85
64-66, cases (cargoes)	$2.00	$2.00	$2.00
KEROSENE			
44 water white	8.00	8.00	8.00
41-43 prime white	7.00	7.00	7.00
Water white, cases (cargoes)	$1.80	$1.80	$1.80
Prime white, cases (cargoes)	$1.70	$1.70	$1.70
DOMESTIC GAS & BUNKER OILS			
*26-30 translucent gas oil	4.00	4.00	4.00
*30 plus translucent gas oil	4.00 – 4.25	4.00 – 4.25	4.00 – 4.25
Grade C bunker oil	$0.95	$0.95	$0.95
Grade C bunker oil, cargoes	$0.70 –$0.75	$0.70 –$0.75	$0.70 –$0.75
*Less than ½ of 1% sulphur.			
MEXICAN CRUDE AND BUNKER OILS (F. O. B. Steamer, Tampico)			
Heavy Panuco crude taxes to be paid	$0.65 –$0.70	$0.65 –$0.70	$0.60 –$0.65
Grade C bunker oil for bunkering purposes, taxes paid	$0.90 –$0.95	$0.90 –$0.95	$0.90 –$0.95
SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0. Tanker, f. o. b. Houston)			
100 vis. No. 2 unfiltered pale	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50
200 vis. No. 3 unfiltered pale	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
300 vis. No. 3 unfiltered pale	9.75 –10.00	9.75 –10.00	9.75 –10.00
500 vis. No. 3½ unfiltered pale	11.25 –11.50	11.25 –11.50	11.25 –11.50
750 vis. No. 4 unfiltered pale	12.50 –13.00	12.50 –13.00	12.50 –13.00
1200 vis. No. 5 unfiltered pale	16.25 –16.50	16.25 –16.50	16.25 –16.50
200 vis. No. 5-6 red oil	7.00 – 8.00	7.00 – 8.00	7.00 – 8.00
300 vis. No. 5-6 red oil	8.00 – 8.50	8.00 – 8.50	8.00 – 8.50
500 vis. No. 5-6 red oil	9.25 –10.00	9.25 –10.00	9.25 –10.00
750 vis. No. 5-6 red oil	11.00 –12.00	11.00 –12.00	11.00 –12.00
1200 vis. No. 5-6 red oil	15.00 –16.00	15.00 –16.00	15.00 –16.00

Gulf Domestic Market

(Prices are f.o.b. Gulf oil terminals in Texas and Louisiana in shipments of 20,000 bbls. or more, representing sellers' opinions, for domestic shipment only).

	Dec. 16	Dec. 9	Dec. 2
U. S. Motor gasoline	7.375– 7.50	7.50	7.50
41-43 w.w. kerosene	6.375– 6.50	6.375– 6.50	6.375– 6.50
*26-32 translucent gas oil	4.00 – 4.125	4.00 – 4.125	4.00 – 4.125
*Less than ½ of 1% sulphur.			

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Dec. 16	Dec. 9	Dec. 2
Gasoline, U. S. Motor, 53-55 Gravity	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00
Gasoline, U. S. Motor-blends and special cuts	7.25 –10.00	7.25 –10.00	7.25 –10.00
Gas Oil, 30-34, per barrel	$0.85 –$1.00	$0.85 –$1.00	$0.80 –$1.00
Diesel Oil, 27 plus, per barrel	$0.80 –$1.00	$0.80 –$1.00	$0.80 –$1.00
Bunker oil, 14-18, per barrel	$0.65 –$0.85	$0.65 –$0.85	$0.70 –$0.85
Fuel oil, 14-18 per barrel	$0.60 –$0.85	$0.60 –$0.85	$0.60 –$0.85
Kerosene, 38-40 w.w., 125-150 flash, per gal.	5.75 – 6.25	5.75 – 6.25	5.50 – 6.25
Cased Goods			
Gasoline, U. S. Motor	$1.75 –$1.85	$1.75 –$1.85	$1.75 –$1.85
Kerosene, 38-40 w.w., 125, 150 flash	$1.45 –$1.50	$1.45 –$1.50	$1.45 –$1.50

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Dec. 16 Crude & /or Fuel	Refined Oil & /or Spirits
Calif. to U. K. or Continental ports*	31-33	42-43
Gulf to U. K. or Continental ports*	22-23	31
North Atlantic to U. K. or Continental ports*	20-21	28/6
Calif. to North Atlantic ports (not E. of N. Y.)	$0.90-$0.95	$0.90
Gulf to North Atlantic ports (not E. of N. Y.)**	30–38	32-35

*Continental ports in the range between Bordeaux and Hamburg, both inclusive.
**Venezuela loading same rate. For Tampico 3c per bbl. additional.

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Address .....

Tank Wagon Service Station Markets for Gasoline and Kerosene

(OIL PRICE HANDBOOK has t. w. and s. s. markets for a whole year, arranged for quick reference)

These Prices in Effect Dec. 16, 1929, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Atlantic City, N. J.	14	2	16	18	13
Newark, N. J.	15	2	17	19	13
Annapolis, Md.	15	4	19	21	13
Baltimore, Md.	15	4	19	21	12
Cumberland, Md.	16	4	20	22	13
Washington, D. C.	15	2	17	19	12
Danville, Va.	16	5	21	23	12
Norfolk, Va.	15	5	20	22	12
Richmond, Va.	15	5	20	22	13
Roanoke, Va.	16	5	21	23	13
Petersburg, Va.	16	5	21	23	13
Charleston, W. Va.	15	4	19	21	13
Keyser, W. Va.	16	4	20	22	13
Parkersburg, W. Va.	15	4	19	21	12
Wheeling, W. Va.	16	4	20	22	13
Charlotte, N. C.	12	5	17	19	13
Hickory, N. C.	16	5	21	23	13
Mt. Airy, N. C.	16	5	21	23	13
Salisbury, N. C.	14	5	19	21	13
Charleston, S. C.	15	6	21	23	13
Columbia, S. C.	16	6	22	24	13

Note: 2c per gallon discount off t.w. price of gasoline to dealers and commercial consumers thru S. O. New Jersey territory.

CONTINENTAL OIL

Denver, Colo.	14	4	18	21	15.5
Pueblo, Colo.	14	4	18	21	15.5
Grand Junc., Colo.	18.5	4	22.5	25.5	19
Casper, Wyo.	16	4	20	23	14
Cheyenne, Wyo.	17	4	21	24	15.5
Butte, Mont.	20.5	5	25.5	28.5	20
Helena, Mont.	20.5	5	25.5	28.5	20
Salt Lake City, Utah.	17.5	3½	21	21	17
Boise, Ida.	19.5	4	23.5	26.5	19
Twin Falls, Ida.	19.5	4	23.5	27.5	19
Albuquerque, N. M.	15	5	20	22	17

S. O. CALIFORNIA

Phoenix, Ariz.	14	4	18	22	20
Los Angeles, Cal.	16.5	3	19.5	22.5	15.5
Fresno, Cal.	17	3	20	23	17
San Francisco, Cal.	17	3	20	23	15.5
Reno, Nev.	21	4	25	28	19
Portland, Ore.	17.5	3	20.5	23.5	16.5
Seattle, Wash.	17.5	3	20.5	23.5	16.5
Spokane, Wash.	21.5	3	24.5	27.5	20.5
Tacoma, Wash.	17.5	3	20.5	23.5	16.5

Note: 4c per gal. discount to dealers off t.w. price of gasoline to customers taking tank truck delivery, thru S. O. California territory except 1c discount at Phoenix to dealers only.

S. O. LOUISIANA

Little Rock, Ark.	14	5	19	21	13
Alexandria, La.	‡15	4	‡19	21	†16
Baton Rouge, La.	12	4	16	18	†14.5
Lake Charles, La.	††16.5	4	††20.5	††22.5	†16
New Orleans, La.	*11	4	*15	15	†13
Shreveport, La.	15.5	4	19.5	21.5	†15
Lafayette, La.	**16	4	**20	**22	†14
Bristol, Tenn.	16	5	21	22	14
Chattanooga, Tenn.	15	5	20	22	14
Knoxville, Tenn.	15	5	20	22	16
Nashville, Tenn.	14	5	19	19	16
Memphis, Tenn.	13	5	18	20	12.5

Note: 2c per gallon discount off t.w. price of gasoline to dealers thru S. O. Louisiana territory.

*New Orleans gasoline prices include 1c parish tax in addition to 4c state tax, and kerosene prices include 1c state tax and 1c parish tax.

†Kerosene price in Louisiana includes 1c state tax.

**Lafayette gasoline prices include 1c parish tax in addition to 4c state tax.

††Lake Charles gasoline prices include 1c parish tax.

‡Alexandria gasoline prices include 1c parish tax.

S. O. KENTUCKY

Ashland, Ky.	15	5	20	21	15.5
Catlettsburg, Ky.	15	5	20	21	15.5
Lexington, Ky.	15	5	20	22	15.5

Latest Changes in Tank Wagon Prices

Gasoline

S. O. New Jersey—T.w. and s.s. cut 2c, Charlotte, to 17c and 19c respectively, including 5c tax, **Dec. 10.**

S. O. Louisiana—T.w. and s.s. cut 2c, Baton Rouge, to 16c and 18c respectively, including 4c tax, **Dec. 11.**

T.w. and s.s. cut 2c, Memphis, to 18c and 20c respectively, including 5c tax, **Dec. 11.**

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Louisville, Ky.	16	5	21	23	13
Covington, Ky.	15	5	20	21	15.5
Clarksdale, Miss.	13	5	18	20	12.5
Gulfport, Miss.††	17.5	5	22.5	24.5	14
Jackson, Miss.	14	5	19	21	13
Natchez, Miss.	15.5	5	20.5	20.5	14
Vicksburg, Miss.	15.5	5	20.5	22.5	14
Birmingham, Ala.	13	4	17	19	13
Mobile, Ala.‡	14	4	18	20	15
Montgomery, Ala.*	15	4	19	21	16.5
Atlanta, Ga.	14	6	20	22	†16.5
Augusta, Ga.	12	6	18	20	†15.5
Macon, Ga.	15	6	21	23	†16.5
Savannah, Ga.	16	6	22	24	†15.5
Jacksonville, Fla.	16	6	22	24	14.5
Miami, Fla.	17	6	23	25	15.5
Tampa, Fla.	14	6	20	22	14.5
Pensacola, Fla.**	12	6	18	20	14.5

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosene at Montgomery included. ‡Mobile gasoline prices include 1c city tax

†Georgia kerosene prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

††Both tank wagon prices at Gulfport include Harrison county privilege tax of 2c.

S. O. NEBRASKA

Omaha, Neb.	16.25	4	20.25	22.25	13.25
McCook	17.75	4	21.75	23.75	14.75
Norfolk	16.75	4	20.75	22.75	13.75
North Platte	17.75	4	21.75	23.75	14.50
Scottsbluff	17.75	4	21.75	23.75	14.25

S. O. INDIANA

Chicago, Ill.	14	3	17	18	13
Decatur, Ill.	16.2	3	19.2	20.2	13.1
E. St. Louis, Ill.	12.4	3	15.4	15.4	12.2
Joliet, Ill.	16.4	3	19.4	20.4	13.3
Peoria, Ill.	16.2	3	19.2	20.2	13.1
Quincy, Ill.	16.2	3	19.2	20.2	12.9
Indianapolis, Ind.	16.2	4	20.2	21.2	14.2
Evansville, Ind.	16	4	20	21	14
South Bend, Ind.	16.4	4	20.4	21.4	14.4
Detroit, Mich.	16.8	3	19.8	20.8	14.7
Grand Rapids, Mich.	16.7	3	19.7	20.7	14.6
Saginaw, Mich.	16.9	3	19.9	20.9	14.8
Green Bay, Wisc.	16.6	2	18.6	19.6	13.4
Madison, Wisc.	16.3	2	18.3	19.3	13.1
Milwaukee, Wisc.	16.1	2	18.1	19.1	12.9
La Cross, Wisc.	17.2	2	19.2	20.2	14
Minneapolis, Minn.	17.2	3	20.2	21.2	13.9
Duluth, Minn.	17.5	3	20.5	21.5	13.9
Mankato, Minn.	17.1	3	20.1	21.1	13.7
Des Moines, Ia.	16.5	3	19.5	20.5	13.3
Davenport, Ia.	16.5	3	19.5	20.5	13.3
Sioux City, Ia.	16.1	3	19.1	20.1	12.9
Mason City, Ia.	16.5	3	19.5	20.5	13.3
St. Louis, Mo.	*15.9	2	17.9	18.9	12.3
Kansas City, Mo.	†16.9	2	18.9	19.9	11.6
St. Joseph, Mo.	†16.5	2	18.5	19.5	12.2
Fargo, N. D.	18.9	3	21.9	22.9	15.9
Grand Forks, N. D.	19.2	3	22.2	23.2	16.2
Minot, N. D.	18.9	3	21.9	22.9	15.9
Pierre, S. D.	17	4	21	22	14.4
Huron, S. D.	17.3	4	21.3	22.3	14.7
Wichita, Kans.	14.8	3	17.8	18.8	11.8
Bartlesville, Okla.	14.5	4	18.5	19.5	11.5

S. O. Indiana's quantity contract price schedule thru territory except Chicago on tank truck deliveries of gasoline, figured from the service station price, is 2c for 500 gals. or more a month; 2½c for 2000 gals. or more a month and 3c for 6000 gals. or more a month.

In Chicago and vicinity, these discounts apply. Over 500 gals. per month, 2c per gal. off service station price; over 1,000 gals. per month, 4c per gal. off service station price.

*Includes city tax of ½c

†Includes city tax of 1c.

S. O. OHIO

Ohio state-wide.	14	4	18	19	12
Columbiana, Meigs, Washington, Mercer, Stark, Gallia, Darke and Hancock Counties:	13	4	17	17	12

Note: Discount to dealers and commercial accounts generally thru Ohio is 2c per gal. off t.w. price with some exceptions. In 8 counties mentioned above, discount is 3c per gal. off t.w. price.

MAGNOLIA PETROLEUM

Muskogee, Okla.	12	4	16	19	10
Oklahoma City	13	4	17	20	10
Tulsa, Okla.	11	4	15	19	10
Fort Smith, Ark.†	11	†4	15	17	12
Little Rock, Ark.	14	5	19	21	13
Texarkana, Ark.*	13	*4	17	19	12
Dallas, Tex.	13	4	17	21	12
Fort Worth, Tex.	13	4	17	20	12
Houston, Tex.	9	4	13	17	11
San Antonio, Tex.	11	4	15	19	11
El Paso, Tex.	12	4	16	20	16

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 5c Arkansas tax applies.

†Within city of Fort Smith, Oklahoma tax of 4c applies. In this district outside of the city, the 5c Arkansas tax applies.

S. O. NEW YORK

Due to local price conditions at many points in S. O. New York territory, actual prices on both gasoline and kerosene are being made at under the posted tank wagon prices published below.

Greater New York City: Boroughs of Manhattan, Bronx, Queens & Kings.	14	2	16	18	15
Borough of Richmond.	15	2	17	19	15
Albany, N. Y.	16	2	18	20	15
Buffalo, N. Y.	14	2	16	18	14
Rochester, N. Y.	14	2	16	18	13
Syracuse, N. Y.	16	2	18	20	15
Boston, Mass.	16	2	18	20	15
Augusta, Me.	16	4	20	20	15
Manchester, N. H.	16	4	20	22	15
Burlington, Vt.	16	4	20	22	15

Note: S. O. New York allows concessions of 1 to 2c per gal. to dealers under posted tank wagon prices.

*The Standard of New York does not operate stations in New York City. This figure is the retail price of a principal station operator in New York selling Socony gasoline.

Above prices include these inspection fees on both gasoline and kerosene, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosene; Arkansas, 1/20c on both; Florida, 1/8c on both; Georgia, 1/10c on both; Indiana, 4/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 3/10c to 1/2c on both; Nebraska, 3/50c to 1/2c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina, 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosene; Wisconsin, 3/50c on both.

Kerosene inspection fees only, per gallon; Iowa, 7/100c; Michigan 1/5c to 4/5c per gal.

In Illinois, cities and villages have the power to appoint oil inspectors and fix inspection fees which is done in some instances. In some cases in the above state or other states there are local inspection fees.

Tank Wagon, Service Station Markets for Gasoline and Kerosene

Prices in Effect Dec. 16, 1929

ATLANTIC REFINING

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W
Pittsburgh, Pa.	15	*	15	21	13
Philadelphia, Pa.	15	*	15	21	13
Allentown, Pa.	15	*	15	21	13
Erie, Pa.	15	*	15	19	13
Scranton, Pa.	15	*	15	21	13
Altoona, Pa.	15	*	15	21	13
Williamsport, Pa.	14	*	14	18	13
Dover, Del.	15	3	18	20	13
Wilmington, Del.	15	3	18	20	13
Boston, Mass.	16	2	18	20	15
Springfield, Mass.	16	2	18	20	15
Worcester, Mass.	16	2	18	20	15
Fall River, Mass.	16	2	18	20	13
Providence, R I.	16	2	18	20	13
Hartford, Conn.	16	2	18	20	15
New Haven, Conn.	16	2	18	20	15
Atlantic City, N. J.	14	2	16	18	13
Camden, N. J.	15	2	17	19	13
Trenton, N. J.	15	2	17	19	13
Annapolis, Md.	16	4	20	22	13
Baltimore, Md.	15	4	19	21	12
Hagerstown, Md.	14	4	18	18	12
Richmond, Va.	15	5	20	22	13
Wilmington, N. C.	15	5	20	22	13
Brunswick, Ga.	16	6	22	24	**16.5
Jacksonville, Fla.	16	6	22	24	14.5

Note: 2c per gal. discount off t.w. price of gasoline on sales to dealers; discount to commercial accounts under contract for one year in accordance with Code of Ethics.

*4-cent state tax is collected by retail dealer and paid by him directly to state.

**Georgia kerosene prices include 1c state tax.

V. M. & P. NAPHTHA

(Changes ordinarily occur coincident with gasoline price changes)

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	14.7	16.7	17
Detroit	17.4	18.9	20.7
Kansas City	†15.9	†17.4	†19.2
Milwaukee	16.4	*19.9	*21.7
Minneapolis	**19.7	**21.2	*23
St. Louis	15.6	17.1	18.9
New York		16	23
Boston		19	23

*Includes 2c state tax. †Includes 1c city tax.
**Includes 3c state tax.

Petroleum Spirits

Tank Cars	(Solvent)
New York refineries	11.50–12.00
Philadelphia refineries	11.50–12.00
Tank Wagon or Steel Barrels	
New York City	16–18
New England	18–19
New Jersey	16–18
Pennsylvania	16–19

Note: 2c off above t.w. prices to large buyers in some instances.

CANADA

(Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	19.5	5	24.5	28	20.5
Ottawa	19.5	5	24.5	28	20.5
Cochrane	24.5	5	29.5	..	25.5
Ft. William	22.5	5	27.5	31	22.5
Border Cities, including Windsor	18.5	5	23.5	27	19.5
MANITOBA					
Winnipeg	21.5	3	24.5	28	21.5
SASKATCHEWAN					
Regina	26	3	29	33	26
ALBERTA					
Edmonton	27.5	5	32.5	36	27.5
Calgary	23.5	5	28.5	32	23.5
BRITISH COLUMBIA					
Vancouver	23	3	26	30	24
QUEBEC					
Montreal	20.5	5	25.5	29	21.5
Quebec City	21.5	5	26.5	30	22.5
Three Rivers	21.5	5	26.5	30	22.5
NEW BRUNSWICK					
St. John	22	5	27	31	24
Moncton	22	5	27	31	24
NOVA SCOTIA					
Halifax	22	5	27	31	24
Sydney	22	5	27	31	24
PRINCE EDWARD ISLAND					
Charlottetown	22	5	27	31	24

Note: In districts surrounding these points 1c additional is added to city price.

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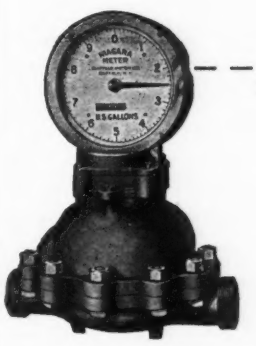

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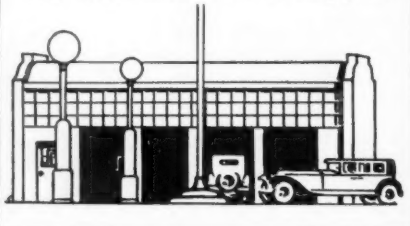

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Crude Oil Prices (in Effect Dec. 16, 1929)

(Crude prices for the whole year in OIL PRICE HANDBOOK published annually)

EASTERN FIELDS

(All Penna. Crude prices effective Oct. 1, 1929)

(Posted by Joseph Seep Purchasing Agency)

Penna. Grade Oil in New York Transit Lines (Alleghany, N. Y. District) *$3.05
Bradford District Oil in National Transit Lines (Bradford District) *3.05
Penna. Grade Oil in National Transit Lines (Other Pennsylvania) *3.05
Penna. Grade Oil in Southwest Penna. Pipe Lines (Other Pennsylvania) 3.00
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) 2.90
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O. district) 2.70
Wayne district crude in Cumberland lines (West Virginia) $1.42
Corning Grade in Buckeye Pipe Lines (Ohio) (Effective Dec. 6, 1929) 1.80
Corning, O., heavy grade (Effective Dec. 6, 1929) 1.70
Somerset Oil in Cumberland Pipe Lines (Kentucky) (Effective Nov. 12, 1929) 1.55
Somerset Oil in Eureka Pipe Lines (Effective Nov. 12, 1929) 1.29
Ragland Grade in Cumberland Pipe Lines (Kentucky) (Effective Jan. 29, 1929) $0.60

***Oil run prior to July 1, 1929 is $3.00 per bbl.**

(Posted by Stoll Oil Refining Co.)

Oil City, Ky., oil in Stoll lines (Effective Oct. 7, 1929) $1.70

MICHIGAN

(Posted by Dixie Oil Co.)

Traverse and Dundee (Muskegon):

32-32.9	$1.25	39-39.9	$1.60
33-33.9	1.30	40-40.9	1.65
34-34.9	1.35	41-41.9	1.70
35-35.9	1.40	42-42.9	1.75
36-36.9	1.45	43-43.9	1.80
37-37.9	1.50	44 and above	1.85
38-38.9	1.55		

(Posted by Pure Oil Co.)

Midland, Midland County $1.50

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective May 21, 1929

Wooster	$1.90	Princeton	$1.75
Lima	1.80	Illinois	1.75
Waterloo	1.20	Plymouth	1.28
Indiana	1.57	West Kentucky	1.68

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Petrolia $2.20
Oil Springs 2.27

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of Pariric Oil & Gas Co.

(In Oklahoma, Kansas, North and East Central Texas)

Effective May 20, 1929

Below 25	$0.85	35-35.9	$1.40
25-25.9	0.90	36-36.9	1.45
26-26.9	0.95	37-37.9	1.50
27-27.9	1.00	38-38.9	1.55
28-28.9	1.05	39-39.9	1.60
29-29.9	1.10	40-40.9	1.65
30-30.9	1.15	41-41.9	1.70
31-31.9	1.20	42-42.9	1.75
32-32.9	1.25	43-43.9	1.80
33-33.9	1.30	44 and above	1.85
34-34.9	1.35		

Humble Oil & Refining Co. Prices

(Ranger, North Texas, Mexia, Powell, Boggy Creek, Richland, Wortham, Lytton Springs, Currie, Moran and Nocona crudes all in Texas.)

May 20, 1929, same schedule as Prairie in above fields.

Magnolia Petroleum Co.

(In Oklahoma, Kansas and North and East Central Texas)

May 20, 1929, Magnolia posted in above fields and in Panola Co., same schedule as Prairie, except these grades:

Below 26	$0.70	29-29.9	0.95
26-26.9	0.75	30-30.9	1.05
27-27.9	0.85	31-31.9	1.15
28-28.9	0.90		

May 20, 1929, Glasscock, Crane, Upton, Winkler, Howard and Mitchell Counties same prices as Humble's postings in West Texas which see.

Iatan district $0.93
Corsicana heavy 0.80
Luling 0.90
Mirando 0.90

Carter Oil Co.

(Oklahoma and Kansas)

May 20, 1929, same schedule as Prairie except Carter does not post oil below 25.

PANHANDLE, TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Hutchinson and Carson Counties:

Below 32	$0.90	38-38.9	$1.25
32-32.9	0.95	39-39.9	1.30
33-33.9	1.00	40-40.9	1.35
34-34.9	1.05	41-41.9	1.40
35-35.9	1.10	42-42.9	1.45
36-36.9	1.15	43-43.9	1.50
37-37.9	1.20	44 and above	1.55

Wheeler County:

Below 30	$0.90	37-37.9	$1.30
30-30.9	0.95	38-38.9	1.35
31-31.9	1.00	39-39.9	1.40
32-32.9	1.05	40-40.9	1.45
33-33.9	1.10	41-41.9	1.50
34-34.9	1.15	42-42.9	1.55
35-35.9	1.20	43-43.9	1.60
36-36.9	1.25	44 and above	1.65

Gray County:

Below 29	$0.90	37-37.9	$1.35
29-29.9	0.95	38-38.9	1.40
30-30.9	1.00	39-39.9	1.45
31-31.9	1.05	40-40.9	1.50
32-32.9	1.10	41-41.9	1.55
33-33.9	1.15	42-42.9	1.60
34-34.9	1.20	43-43.9	1.65
35-35.9	1.25	44 and above	1.70
36-36.9	1.30		

Above prices met by The Texas Co. and Magnolia on May 20.

WEST TEXAS

Humble Oil & Refining Co.

Effective May 20, 1929

Winkler, Crane, Upton, Crockett, and Pecos Counties, also Lea County, N. Mex.

Below 25	$0.70	31-31.9	0.98
25-25.9	$0.74	32-32.9	$1.02
26-26.9	$0.78	33-33.9	1.06
27-27.9	0.82	34-34.9	1.10
28-28.9	0.86	35-35.9	1.14
29-29.9	0.90	36 and above	1.18
30-30.9	0.94		

Howard and Glasscock counties:

Effective Nov. 27, 1929

Below 25	$0.70	31-31.9	$0.90
25-25.9	.74	32-32.9	.92
26-26.9	.78	33-33.9	.94
27-27.9	.82	34-34.9	.96
28-28.9	.84	35-35.9	.98
29-29.9	.86	36 and above	1.00
30-30.9	.88		

May 20, 1929, The Texas Co. posted same prices as Humble in Crane, Upton, Pecos and Winkler., and Magnolia in Crane, Upton, Winkler, Glasscock, Howard and Mitchell.

SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective May 20, 1929

Mirando $0.90
Salt Flat 1.25

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado, Crichton, De Soto and **Cotton Valley.

Effective May 22, 1929

Below 28	$1.00	36-36.9	$1.45
28-28.9	1.05	37-37.9	1.50
29-29.9	1.10	38-38.9	1.55
30-30.9	1.15	39-39.9	1.60
31-31.9	1.20	40-40.9	1.65
32-32.9	1.25	41-41.9	1.70
33-33.9	1.30	42-42.9	1.75
34-34.9	1.35	43-43.9	1.80
35-35.9	1.40	44 and above	1.85

**Cotton Valley, below 36, $0.85. Beginning with 36-36.9, same schedule as above.

Smackover, below 24 ..... $0.85
do 24 and above 1.00
Bellevue 1.30
*Urania, La 1.10
†East El Dorado 0.75

*Posted by Louisiana Oil Refining Corp.

†Posted by Magnolia Petroleum Co.

May 20, The Texas Co. same schedule in Louisiana as Standard, plus these grades: 24-24.9, $0.85; 25-25.9, $0.90; 26-26.9, $0.95; 27-27.9, $1.00.

May 22, Magnolia, Atlantic, Shreveport-Eldorado Pipe Line, Louisiana Oil, and Gulf Companies met Standard schedule in Louisiana-Arkansas fields.

STEPHENS, ARKANSAS

Louisiana Oil Refining Corp., and Atlantic Oil Producing Co.

Effective May 22, 1929

Below 28	$0.90	30-30.9	$1.02
28-28.9	0.94	31-31.9	1.06
29-29.9	0.98	32 and above	1.10

GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective May 20, 1929

Grades A	$1.30	29-29.9	$1.30
Grades B:		30-30.9	1.33
Below 25	$1.15	31-31.9	1.36
25-25.9	1.18	32-32.9	1.39
26-26.9	1.21	33-33.9	1.42
27-27.9	1.24	34-34.9	1.45
28-28.9	1.27	35 and above	1.48

Fields classified as A and B are Spindletop, Goose Creek, Hull, Liberty, Sour Lake, West Columbia, Orange, Boling, Pierce Junction, Sugarland and Raccoon Bend. All other fields are Grades A only.

Tryon Retires From Gulf Company

CLEVELAND, Dec. 16.—After more than a quarter of a century of continuous service, Jno. W. Tryon retired on Dec. 15 as general manager of the Gulf Refining Co. at Port Arthur.

During this time Mr. Tryon has directed the growth of the Port Arthur refinery from a struggling handful of men with a battery of shell stills and an agitator or two, perched precariously out on the gulf coast marshes, to a huge plant which is one of the largest, if not the largest in the world. In recognition of his work Mr. Tryon was the guest of honor at a banquet tendered him by his friends and colleagues on December 11 at Port Arthur, where every effort was made to show their appreciation, and their regret that Mr. Tryon is to no longer be at the helm in the big plant.

Very little has been announced as to Mr. Tryon's plans for enjoying his well-earned vacation, but it is to be expected that he will find plenty to occupy his time. His taste and ability as a sportsman in field, marsh and sea are well known along the gulf coast.

New Motor Fuel From Coal

CLEVELAND, Dec. 16.—Tests on heavy road vehicles propelled by producer gas, over a considerable period, have proved definitely and conclusively that gas made from synthetic charcoal is an economical fuel, according to advices just received from London.

The firm Sensible Heat Distillation, Ltd., has been experimenting with this fuel, obtained from bituminous coal by a distillation process, and when used in gas generators it provides a fuel which is the equal of petrol in providing motive power, it is stated.

No data is as yet available as to the exact composition of the fuel, but those interested in its production believe that it bids fair to become a general alternative to petrol for propulsion purposes.

CHICAGO, Dec. 14.—The Wadhams Oil Corp., Milwaukee, Wis., will open a Tulsa office about Jan. 1 at Room 703, Philcade Bldg. W. P. Jacobi will be in charge as director of petroleum purchases for both the Wadhams and Bartles-Maguire companies. Mr. Jacobi formerly was in charge of the Tulsa office of the Wadhams company.

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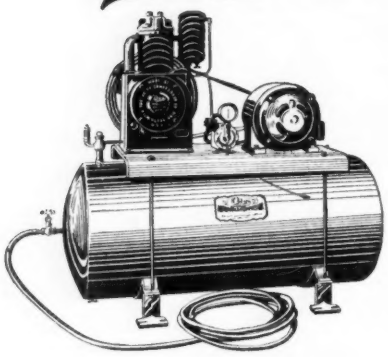

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Oil Merchandising

An average of 10 stories per month have been published in National Petroleum News the past six months on oil merchandising problems.

Here are 83 of the more important ones that have appeared since April on how oil companies sell their goods:

1929

Salesmanship, series of articles on: Disarm customer first, Nov. 27, p. 101; Knowledge of credit responsibility, Oct. 9, p. 97; Ability to see mechanical ills, Sept. 25, p. 161; Tactful meeting of customers' complaints, Sept. 4, p. 91; Keeping old customers and getting new ones, Aug. 28, p. 91; Selling from the truck seat, Aug. 14, p. 101.

Mail orders take sales from neighborhood station Nov. 20, p. 85

Small town station does 22 greasing jobs daily Nov. 13, p. 24

Anti-freeze compounds help station sales Nov. 13, p. 26

Servicing cars in club atmosphere Nov. 13, p. 77

Gasoline is 55% of sales at one-stop station Nov. 13, p. 89

Gardens are sales help, prize winner says Nov. 6, p. 75

Personal calls bring station business Nov. 6, p. 79

Gasoline distribution as retailing expert sees it Nov. 6, p. 84

First hotel for motorists opened by Pierce Oct. 30, p. 57

Airplanes used in selling Oct. 30, p. 263

How window displays at stations sell customer Oct. 30, p. 288

Appealing to customers with indoor lubrication Oct. 30, p. 296

Picks oil he'll sell only after road tests Oct. 30, p. 320

Merchandising talks Oct. 30, p. 323

How do you label containers on small gasoline sales? Oct. 30, p. 329

Personal attention brings 2,000 cars a month to tiny lube station Oct. 30, p. 331

"Kicks", salesmanship, direct mail, build 200,000 gallon business Oct. 23, p. 72

50% of domestic oil sales renewed by mail Oct. 16, p. 83

Automatic merchandisers boost station profits Oct. 16, p. 41

Seven talks on profits in marketing Oct. 2, pages 101, 105, 107, 109, 111, 115 and 116.

90-day battery guarantees gets friends for one-stop station Sept. 18, p. 83

Free powder puffs attract women drivers Sept. 11, p. 100

8 pointers on how to build grease sales Aug. 28, p. 100

How marketer brought gasoline gallonage to 1200 a day Aug. 21, p. 86

Tire company links beauty with quick service Aug. 14, p. 96

Will beauty shop at filling station bring more business Aug. 14, p. 105

Bus terminal-filling stations opened Aug. 7, p. 35

Straight line moving platform speedy for car washing Aug. 7, p. 92

Encloses pits now for winter profits Aug. 7, p. 101

Floating bulk station sells oils on Lake Aug. 7, p. 102

Gasoline is best seller for tire dealer July 31, p. 75

One-stops to cover 2 acres in Cleveland July 24, p. 30

One Florida station open nights only July 24, p. 72

How Omaha Ford dealers go after greasing July 24, p. 82

Attracting customers with flowers July 17, p. 115

One-stops bring new merchandising methods July 10, p. 30

Sells gas by the pound in tank wagons July 10, p. 80

Developing sales territory scientifically July 10, p. 95

How one marketer built oil trade on ginger ale July 10, p. 98

Danger of overbuilding one-stop stations July 3, p. 29

One-stops to be probable factors in oil selling June 26, p. 27

Oil marketers, not tire men, to run one-stops June 19, p. 35

Serving boats and autos from one station June 19, p. 88

Jobber could lose two-thirds customers and make more money June 19, p. 116

Roadside stations must sell merchandise also June 12, p. 82

Careful survey needed before building one-stop station June 12, p. 88

Keeps warm oil to save truck time June 12, p. 108

Even color, trained attendants at Ohio Standard's new super station June 12, p. 94

Alabama jobber builds big business in special oils June 12, p. 105

Oil man has building and loan department for dealers June 12, p. 110

Small jobbers make money on motor oils alone May 29, p. 84

30-day credit enforced in wheat belt May 22, p. 34

Big companies dominate distribution in Florida May 22, p. 96

Opportunity for jobbers to help grease sales May 22, p. 120

Marketer finds free parking not profitable May 22, p. 136

Tire companies help dealers build one-stop service stations May 15, p. 30

Grease stations may have to get new equipment May 15, p. 32

Station location, not building, most important May 15, p. 113

Marketer beat bushes for business May 8, p. 92

Forms finance company on cash basis May 8, p. 106

Fishing tackle profitable sideline May 8, p. 111

Oil companies may aid tire dealers in building super stations May 1, p. 40-a

Two small trailers deliver 6986 gals. a day May 1, p. 40-b

Governors boost tourist campaign May 1, p. 86

Light truck tractors given hard road tests April 24, p. 32

Tourist camp a good advertisement April 24, p. 93

Marketer takes lubrication to farm trade April 24, p. 104

Wooden Indian is trade puller April 24, p. 112

Accessory, department and hardware stores compete for motor oil April 17, p. 101

Offers trip as sales prize to agents April 17, p. 107

Dance, dine, play bridge at super station April 3, p. 82

Back copies of any of the above issues are 25c a copy. On issues that are exhausted, photostats will be furnished at 40c per page. Libraries in the larger cities generally keep back files of *National Petroleum News* complete.

National Petroleum News

Main Office: 1213 West Third St. Cleveland, Ohio

Crude Oil Prices (in Effect Dec. 16, 1929)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

GULF COASTAL

Prices of The Texas Co.

Effective May 20, 1929

Grades A	$1.30	*Grades B	$1.15
‡Grades B (light crude):			
35–35.9	$1.49	40–40.9	$1.69
36–36.9	1.53	41–41.9	1.73
37–37.9	1.57	42–42.9	1.77
38–38.9	1.61	43–43.9	1.81
39–39.9	1.65	44 and above	1.85

*Grades B include all heavy crudes which do not meet tests for Grades A or for Gulf Coast light crude.

‡The Texas Co.'s gravity and price schedule on all oil below 35° is same as Humble's postings on Grades B.

ROCKY MOUNTAIN FIELDS

Prices of Ohio Oil Co., and Midwest Refining Co.

(Salt Creek prices effective May 20, 1929)

‡Salt Creek 29–29.9	$1.10
" " 30–30.9	1.15
" " 31–31.9	1.20
" " 32–32.9	1.25
" " 33–33.9	1.30
" " 34–34.9	1.35
" " 35–35.9	1.40
" " 36–36.9	1.45
" " 37 and above	1.50
Elk Basin	1.65
Grass Creek light	1.65
Bid Muddy	$1.43
Lance Creek	1.68
Rock Creek	1.40
Mule Creek	1.20
Rex Lake	1.10
‡Osage	1.65
‡Cat Creek, Mont.	1.65
Sunburst, Mont.	1.75
‡Hogback, N. Mex.	1.70
Artesia, N. Mex.	1.08

‡Posted by Midwest Refining Co. Midwest also buys Grass Creek light and Elk Basin.

CALIFORNIA

***Standard Oil Co. of California**

Gravity	Alamitos Heights Huntington Beach Signal Hill Seal Beach	Inglewood Torrance	Olinda-Brea Canon †Richfield	Athens-Rosecrans Dominguez	Elwood Terrace	Whittier La Habra	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Buena Vista & Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Montebello	Kettleman Hills	*Santa Maria (Orcutt)	*Ventura
14–14.9	$ .70	$ .70	$ .70	....	....	$ .70	$ .70	.....	$ .50	$ .50	$ .50	$ .50	$ .50	$ .70	....	$ .65	$ .70
15–15.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
16–16.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
17–17.9	.70	.70	.70	....	....	.70	.70	....	.50	.50	.50	.50	.50	.70	....	.65	.70
18–18.9	.75	.75	.75	....	....	.75	.75	....	.50	.56	.56	.56	.56	.70	....	.70	.75
19–19.9	.80	.80	.80	....	....	.80	.80	....	.50	.62	.62	.62	.62	.75	$1.65	.70	.80
20–20.9	.85	.85	.85	....	....	.84	.84	....	....	.68	.68	.68	.68	.80	for	.70	.85
21–21.9	.89	.89	.89	....	....	.88	.88	.89	....	.74	.74	.74	.74	.85	55°	.86	.86
22–22.9	.93	.93	.93	....	....	.91	.91	.92	....	.80	.80	.80	.80	.90	gravity	.87	.87
23–23.9	.97	.97	.97	....	....	....	.94	.95	....	.85	.85	.85	.85	.95	and	.90	.90
24–24.9	1.01	1.01	1.01	1.01	....	....	.97	.98	....	.90	.90	.88	.88	.98	over	.94	.94
25–25.9	1.05	1.05	1.05	1.05	....	....	1.00	1.01	....	.95	.95	.91	.91	1.01	....	.98	.98
26–26.9	1.09	1.09	1.09	1.09	....	....	1.04	1.04	....	1.00	1.00	.94	.94	1.04	....	1.02	1.02
27–27.9	1.13	1.13	1.13	1.13	....	....	1.08	1.07	....	1.05	1.05	.98	.97	1.07	....	....	1.06
28–28.9	1.17	1.17	1.17	1.17	....	....	1.12	1.10	....	1.10	1.10	1.02	....	1.10	....	....	1.10
29–29.9	1.21	....	1.21	1.21	....	....	1.16	1.15	....	1.16	1.16	1.06	....	1.13	....	....	1.14
30–30.9	1.25	....	1.25	1.25	....	....	1.20	1.20	....	1.22	1.22	1.10	....	1.16	....	....	1.18
31–31.9	1.30	....	1.30	1.30	....	....	....	1.25	....	1.28	1.28	1.14	....	....	....	....	1.23
32–32.9	1.35	....	....	1.35	....	....	....	1.30	....	1.34	1.34	1.18	....	....	....	....	1.28
33–33.9	....	....	....	1.41	....	....	....	1.35	....	1.40	1.40	1.22	....	....	....	....	1.34
34–34.9	....	....	....	1.47	$1.16	....	....	1.40	....	....	1.46	1.26	....	....	....	....	....
35–35.9	....	....	....	1.53	1.22	....	....	1.45	....	....	1.52	1.30	....	....	....	....	....
36–36.9	....	....	....	1.59	1.28	....	....	1.50	....	....	....	....	....	....	....	....	....
37–37.9	....	....	....	1.65	1.34	....	....	1.55	....	....	....	....	....	....	....	....	....
38–38.9	....	....	....	1.71	1.40	....	....	1.60	....	....	....	....	....	....	....	....	....
39–39.9	....	....	....	1.77	1.46	....	....	1.65	....	....	....	....	....	....	....	....	....
40–40.9	....	....	....	1.83	1.52	....	....	....	....	....	....	....	....	....	....	....	....
41–41.9	....	....	....	1.89	1.58	....	....	....	....	....	....	....	....	....	....	....	....
42–42.9	....	....	....	1.95	1.64	....	....	....	....	....	....	....	....	....	....	....	....

*Santa Maria and Ventura postings are by Union Oil Co. Union Oil Co. posts same prices in all above fields as Standard except it does not post prices in Wheeler Ridge, Whittier, La Habra, Newhall and Kettleman Hills. Standard does not contract for crude testing 11-13.9 gravity, but pays 45c a barrel when purchased.

†Richfield posted only to 30-30.9 at $1.25.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Dec. 16	Dec. 9
Soda Ash light 58% bags, cwt.	$1.32	$1.32
Silicate of Soda 60 deg. drums, cwt.	$1.55	$1.55
Silicate of Soda 40 deg. tank cars, cwt.	$0.60	$0.60
Silicate of Soda 40 deg. drums cwt.	$0.80	$0.80
Sal Soda wks.	$1.00–1.05	$1.00–1.05
Caustic Soda 76% solid, cwt.	$2.90	$2.90
Sulfuric Acid 60 deg. tank cars, f.o.b. shipping point per ton	$11.00	$11.00
Oleum 20%, fuming sulfuric, tank cars, wks.	$18.50	$18.50
Sulfur, flowers of cwt.	$3.10–4.00	$3.10–4.00
Liquid Chlorine, tank cars, wks. lb.	3.50–5.00	3.50–5.00

Compounders' Supplies

Vegetable Oils

Linseed carloads, spot lb.	14.90	14.80
Tanks, spot	14.10	14.00
Soya Bean, Tanks, coast, lb.	10.50-11.00	10.50-11.00

Oleic Acid

Distilled, tanks lb.	9.75	9.75
Distilled, bbls. lb.	10.625	10.625
Saponified, tanks lb.	9.75	9.75
Saponified, bbls. lb.	10.625	10.625

Lard Oils

Prime Winter Strained lb.	15.25	15.25
Extra Winter Strained lb.	12.75	12.75
Extra lb.	12.50	12.50
Extra No. 1 lb.	12.00	12.00
No. 1 lb.	11.75	11.75
No. 2 lb.	11.50	11.50
Tallow oil lb.	11.00	11.00

Neatsfoot Oil

Pure, bbls. lb.	14.50	14.50
Extra, bbls. lb.	12.25	12.25
No. 1 bbls. lb.	12.00	12.00
Cold Pressed lb.	12.50	12.50

Fish Oils

Menhaden Oil		
Light Pressed gal.	70	70
Light Pressed, tank cars, N. Y. gal.	58–60	58–60
White bleached gal.	78	76
Yellow bleached gal.	71	71
Whale, extra winter bleached, gal.	82	82

Naval Stores

Steam, distilled turpentine, N. Y. gal.	51	51
Steam distilled turpentine, Savannah gal.	46	46
Gum turpentine, N. Y. gal.	55	55
Gum turpentine, f.o.b. cars Savannah gal.	49.25	49.25
Wood Rosin F, N. Y. gal.	$7.30	$7.30
Wood Rosin F, Savn'h bbl.	$6.50	$6.50
Gum Rosin B, N. Y. bbl.	$8.00	$8.00
Gum Rosin B, f.o.b. cars Savannah bbl.	$7.30	$7.30
Rosin oil, pure gal.	58	58
Rosin oil, compounded gal.	47	47

Pine Tar

Kiln burnt bbl.	$13.00–14.00	$13.00–14.00
Retort bbl.	$13.50–14.50	$13.50–14.50

Alcohol

Denatured Formula 5, in bbls., per gal.	59–66	59–66

OIL STOCKS AND FINANCES

National Petroleum News

Indian Refining Reports Increased Profits

CLEVELAND, Dec. 14.—Indian Refining Co. reports net profit of $477,813 in the third quarter of 1929 after all charges, as compared with $398,212 in the third quarter of 1928. After dividend requirements on the preferred stock the amount was equivalent to 38 cents a share on the $10 common stock.

In the first nine months of 1929 the company netted before federal taxes but after other charges $797,256 as compared with $508,745 in the first nine months of 1928.

A balance sheet of Sept. 30 shows a reduction in indebtedness as compared with a year before and an improvement in the current position. Comparative balance sheets as of Sept. 30 follow:

Assets

	1929	1928
*Ref. tank cars, pipe lines, etc.	$17,764,641	$15,902,001
Havoline trademark	850,000	850,000
Cash	424,543	664,446
Accts and notes rec	1,726,825	1,681,820
Advances	43,965	48,467
Special deposits	21,844	4,102
Prepaid expenses	82,766	330,595
Inventories	3,040,262	2,326,164
Securities owned	15,736	6,085
Sinking funds	23,083	174,000
Deferred charges	356,205	269,335
Total	$24,349,870	$22,257,015

Liabilities

7% Preferred stock	$ 26,400	$ 3,309,100
Common stock	†12,572,070	8,203,280
Funded debt	2,146,042	4,089,600
Accounts payable	2,130,138	1,936,860
Notes payable	.....	60,000
Bank loans	200,000	950,000
Accrued interest	6,416	11,000
Reserves for losses	.....	8,347
Profit and loss surplus	7,268,804	3,688,828
Total	$24,349,870	$22,257,015

*After depreciation. †Represented by 1,257,207 shares of stock par $10.

Phillips Reveals Details Of Expansion Financing

NEW YORK, Dec. 14.—The 264,249 additional no par shares of capital stock the Phillips Petroleum Co. listed this week on the New York Stock Exchange, are to be used for the payment of the 5 per cent stock dividend recently declared, for subscription by employes, and for exchange for stock of marketing and producing companies recently acquired.

The stock dividend requires 127,206 shares. It will be paid to stockholders of record Dec. 16. The company has allotted 78,256 shares for subscription by officers and employes.

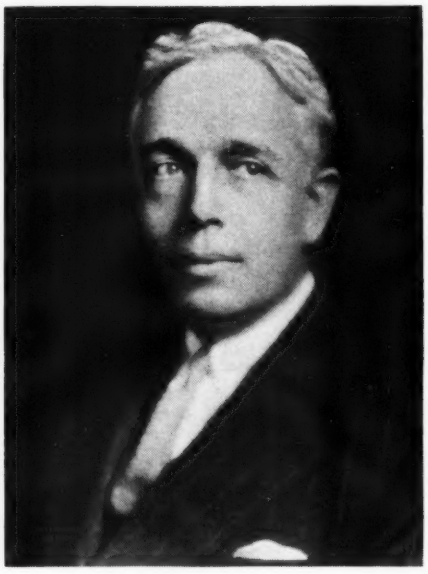
For Operators Oil Co. and Danciger Oil & Refining Co. of Texas, with an 80-acre lease in Gray County, Texas, the company is making payment of 19,000 shares of stock and $400,000 cash. On the property acquired, located in Section 88, Block B-2, H. & G. N. Railway County Survey, there were five wells producing about 9200 barrels a day of 44 gravity oil at time of purchase, which production has since been increased to 12,000 barrels daily.

For E. M. Wilhoit Oil Co. the company pays 6000 shares of capital stock, $100,000 of 5¼ per cent debentures and $53,750 cash. These properties consist of 73 oil and gasoline service stations and bulk stations in 33 cities and towns in Missouri and Kansas.

Winters Oil Co. has been acquired for 10,000 shares of Phillips Petroleum stock. This company has 46 service and bulk stations in 14 cities in Missouri and Kansas.

For State Oil Co., with 17 bulk and service stations in Lincoln, Neb., the company is paying 4000 shares of stock and $50,000 cash.

Purchase of Morrison Oil Co., with 10 distributing stations in Denver, has been made for 1812 shares of stock, while for John Hancock Oil Co., with 76 service and bulk stations in 21 cities in Minnesota and Wisconsin, Phillips is making payment of 17,975 shares of stock.



F. J. Wolfe

TORONTO—F. J. Wolfe, who has been elected a vice president of Imperial Oil, Ltd., entered the oil industry in 1902 with the Queen City Oil Co., at Toronto. Queen City Oil Co. was marketer for Imperial oil products in the province of Ontario.

Mr. Wolfe is a native of Brantford, Canada, and before entering the oil business was a school teacher.

After being divisional manager at Toronto and Montreal he was general sales manager for all Canada and Newfoundland for Imperial. In 1922 he was elected to the board of directors.

Union Statement Shows Gain in Assets

NEW YORK, Dec. 14.—An increase in property valuation is shown by the Union Oil Co. of California in a statement filed with the New York Stock Exchange when it listed additional capital stock.

Including the 50 per cent interest in Union Atlantic Co., the company owned jointly with the Atlantic Refining Co. to operate in Australia and New Zealand, Union showed a gain of almost $20,000,000 in total assets from the first of 1929 to June 30. The ratio of current assets to current liabilities was increased from 5 to 1 Dec. 31 to approximately 6½ to 1 June 30. Consolidated balance sheets follow:

Assets

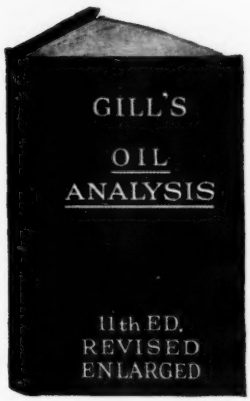
	June 30, '29	Dec. 31, '28
Properties	$294,221,641	$283,872,768
Cash	6,163,690	6,209,360
Accounts, notes receivable, etc.	15,921,542	13,382,421
Investments	797,452	881,702
Government securities	6,025,000	7,135,000
Crude oil	34,597,252	26,666,701
Material and supplies	3,543,796	3,399,705
Deferred charges	662,623	694,723
Total	$361,932,996	$342,242,380

Liabilities

*Capital stock	$101,514,150	$ 94,876,425
Stock subscriptions	2,983,550	121,600
Mortgage debt	21,624,500	23,870,697
Accounts payable	8,102,351	7,598,004
Accrued interest	349,564	376,209
Tax reserve	1,783,117	3,491,419
Depreciation reserve	50,460,853	47,837,249
Depletion reserve	76,352,137	75,567,749
Reserve for drill exp.	27,257,910	23,794,827
Other reserve	612,203	604,367
Total surplus	70,892,661	64,103,834
Total	$361,932,996	$342,242,380

*Par $25.

RICHMOND, Va., Dec. 14.—A charter has been granted the Atlantic Coast Gas and Oil Corp., of Norfolk, Va. with maximum capital of $150,000 to acquire interest in, operate, prospect and develop oil or mineral lands. Asa Cassidy, of Mathews, Va., is president.



HERE IS A BOOK ON TESTING

OIL ANALYSIS, by A. H. Gill, gives flash, fire and gravity tests for burning and lubricating oils, and also viscosity, friction, and evaporation tests for lubricating oils.

It shows how to examine an unknown oil to determine kind, quality and lubricating powers.

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Humble Oils have the valuable quality of leaving a semi-plastic, adsorbed, protective film on the surface of the metal after the fluid film is broken. You get enough lubrication to hold friction down until the film is re-established by rotation of the bearing. Once the parts are moving, Humble Oils retain the proper viscosity to lubricate efficiently at the temperatures produced by high speeds and peak loads.

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Humble Oil & Refining Company

HUMBLE OIL & REFINING CO.
HUMBLE OILS
HOUSTON, TEXAS

Transactions in Oil Shares on New York Stock Exchange

1928 High	1928 Low	1929 High	1929 Low	Listed Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Dec. 14 Sales	First	High	Low	Last	Change
43⅞	27⅛	42⅝	17½	(sh) 922,075	N.P.	Amerada Corp	50cQ	Oct. 31, 29	13,100	21½	21⅞	20⅝	21	— ½
85	51¼	64¾	12½	(sh) 209,180	N.P.	American Republics Corp	....	.....	7,900	25¾	27⅞	20	27⅛	+ 2⅜
53¾	37½	47¼	35	$56,000,000	$25	Associated Oil	50cQ	Sept. 30, 29	40	36	36	†35	35	— 4
62½	50	77⅜	30	50,000,000	25	Atlantic Refining	‡25cQ	Dec. 16, 29	19,000	43	43⅛	38⅝	40¼	— 2¼
53	20	49⅛	20	47,261,125	25	Barnsdall Corp. A	50cQ	Nov. 7, 29	49,000	27½	27⅝	25⅛	26	— 1⅜
51⅛	20	49	38⅛	300,525	25	do B	50cQ	Nov. 7, 29	.....	.....	.....	.....	.....	.....
24½	12¼	32⅞	15	(sh) 956,075	N.P.	Beacon Oil	....	.....	21,000	17⅜	17⅞	16¼	16¾	— ¼
36	25¼	34½	25	$51,524,150	$25	California Petroleum	....	Jan. 1, 29	.....	.....	.....	.....	.....	.....
.....	.....	37⅜	18	(sh) 4,634,163	N.P.	Continental Oil (Delaware)	....	.....	64,000	27½	27¾	25⅜	26½	— ⅝
94⅞	68	94¾	42¼	21,031,400	100	General Asphalt	$1Q	Dec. 16, 29	18,700	55⅞	55⅞	48½	51⅜	— 4⅜
141	110⅛	138	103½	6,628,200	100	do pfd	$1.25Q	Dec. 2, 29	.....	.....	.....	.....	.....	.....
67	79	109	23	25,000,000	100	Houston Oil	....	.....	33,900	61¼	64	52½	58½	— 1⅞
38⅜	21¾	39¼	17¾	(sh) 1,333,157	N.P.	Independent Oil & Gas	50cQ	Oct. 31, 29	14,400	24⅞	24⅞	23½	23⅞	— ⅞
39⅝	9	53	13	$4,299,190	$10	Indian Refining	....	Dec. 15, 20	40,700	22⅝	24½	19⅛	20¾	— 1¾
37¼	8½	51¼	11½	4,550,110	10	do ctfs	....	.....	16,100	20⅜	20¾	17½	18⅝	— 1⅝
185	140	165	160	1,977,700	100	do pfd. new	$1.75Q	Oct. 1, 29	.....	.....	.....	.....	.....	.....
39½	27¾	38⅜	16½	3,992,387	N.P.	Lago Oil & Transport	....	May 2, 27	3,300	22¼	22¼	21	21	— 1⅜
119¾	9⅜	18	7	(sh) 1,187,298	N.P.	Louisiana Oil Refining	....	.....	5,900	9⅞	9⅞	9	9	— ⅞
96	78	100¼	80	$4,000,000	$100	do pfd	$1.62½	Nov. 15, 29	210	84	89	80	80	0
25½	12½	18½	7½	(sh) 330,000	N.P.	Maracaibo Oil	....	.....	1,400	7¾	8⅜	7¾	8	0
360	250	295	176	$45,942,800	$100	Mexican Petroleum	$3Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	12,000,000	100	do pfd	$2Q	Oct. 20, 29	.....	.....	.....	.....	.....	.....
73	4⅝	69⅜	9¼	(sh) 995,500	N.P.	Mexican Seaboard	....	Nov. 15, 24	84,200	22½	22⅞	18½	20¼	— 1¾
44½	25⅛	39⅞	22⅛	(sh) 1,857,461	N.P.	Mid-Continent	50cQ	Nov. 15, 29	21,200	29⅜	29½	27¼	28	— 1½
120½	103¼	121	120¼	$6,718,000	$100	do pfd	$1.75Q	Sept. 1, 29	.....	.....	.....	.....	.....	.....
7⅜	2⅜	5⅛	¾	23,849,720	10	Middle States	....	July 1, 23	.....	.....	.....	.....	.....	.....
5⅞	1½	3⅜	⅛	5,950,500	10	do ctfs	....	.....	7,500	1	1⅛	1	1⅛	+ ⅛
2¼	1	1½	⅝	(sh) 3,500,000	N.P.	Pacific Oil	....	.....	9,500	1	1⅛	1	1	0
55½	38¼	69	40¼	$50,000,000	$50	Pan American P. & T	....	Oct. 20, 27	1,700	60	60	60	60	— 2
58⅞	37⅜	69¼	40½	121,101,400	50	do B	....	Oct. 20, 27	6,700	62	62	58	60	— 2
28⅜	15½	17½	13½	(sh) 400,000	N.P.	Pan. American Western B	....	Jan. 30, 27	.....	.....	.....	.....	.....	.....
21¾	11½	15¼	3	(sh) 199,370	N.P.	Panhandle P. & R	....	.....	2,300	6	6½	5¼	5¼	— ¾
106¼	70	76	47½	$2,935,200	$100	do pfd	....	July 2, 23	200	50	50	50	50	0
53⅞	35¼	47	24¼	(sh) 2,406,803	N.P.	Phillips Petroleum	37½cQ	Oct. 1, 29	30,700	39⅜	40	37	38⅞	— ⅝
5¼	½	3⅜	1	$29,622,925	$25	Pierce Oil Corp	....	.....	4,300	1¼	1⅜	1⅛	1⅛	0
50	16¼	51½	20	15,000,000	100	do pfd	....	Feb. 1, 22	600	23	24	23	24	— 2½
6⅝	3½	5⅞	½	(sh) 2,500,000	N.P.	Pierce Petroleum	....	.....	3,800	2¾	2⅞	2⅝	2¾	0
64⅝	59½	65⅝	40½	$60,636,450	$25	Prairie Oil & Gas	‡50cQ	Sept. 30, 29	7,900	56¼	56⅝	54½	54¾	— 1½
.....	.....	65	45	101,250,000	25	Prairie Pipe Line	‡76cQ	Sept. 30, 29	4,800	58¾	59½	58⅜	58½	— ¼
29⅞	16	25⅞	4	37,450,850	50	Producers & Refiners	....	Sept. 15, 23	1,300	10⅝	11	10	10	— 1
49⅝	41	46¾	25½	2,845,350	50	do pfd	.....	May 1, 25	180	33	33	32¾	32¾	+ ¼
31¼	19	30¾	20	75,959,255	25	Pure Oil Co	37½cQ	Dec. 16, 29	26,200	24½	24¾	23⅛	23¼	— 1¼
119	108	116	108	13,000,000	100	do 8% pfd	$2Q	Oct. 1, 29	300	114	114	110¼	113¾	+ 2
56	23½	49⅝	20	47,127,725	25	Richfield Oil	50cQ	Nov. 15, 29	9,700	29½	29¾	28¼	29	— ¼
.....	.....	42½	15	(sh) 1,200,000	N.P.	Rio Grande Oil Co	‡$1S.A.	July 25, 29	23,100	21½	22½	19⅝	20½	— 1
64	44⅝	64	43⅛	(sh) 546,646	$13.40	Royal Dutch N. Y. shares	$1.873	Aug. 10, 29	32,000	53¾	54¼	51¼	52⅛	— 1⅝
57½	39⅜	55⅜	43	(sh) 65,203,000	£2	Shell Transport & T	$1.447	July 23, 29	130	45⅛	45¾	44¾	45¾	+ ⅛
39⅜	23¼	31⅜	19	12,254,979	N.P.	Shell Union Oil	35cQ	Sept. 30, 29	13,500	24½	24½	23⅛	23⅜	— ⅛
27¼	18⅛	40⅛	15	$8,357,280	$10	Simms Petroleum	40cQ	Dec. 14, 29	9,900	28⅜	29⅜	25	25⅜	— 3⅝
46¾	17⅜	45	21	5,494,095	N.P.	Sinclair Consolidated	‡50cQ	Oct. 15, 29	213,300	28	28	25¼	26	— 1¼
110	102½	111	103	$16,025,200	$100	do pfd	$2Q	Nov. 15, 29	900	108⅞	109½	108⅞	109½	+ ½
42⅝	25	46½	28	27,396,590	25	Skelly Oil Co	50cQ	Dec. 16, 29	10,800	33⅞	33⅞	32¾	33	— ½
80	53	81⅞	51½	(sh) 13,016,435	N.P.	S. O. California	‡62½cQ	Dec. 16, 29	29,100	65⅝	65⅝	61½	62⅝	— 2¾
59¾	37¾	83	48	$612,095,850	$25	S. O. New Jersey	‡25cQ	Dec. 16, 29	232,000	69⅜	69½	63½	66⅜	— 2⅞
45½	28¾	48⅛	31¾	434,094,575	25	S. O. New York	40cQ	Dec. 16, 29	51,100	35⅞	36⅛	34⅛	34½	— 1¾
77	31½	84¾	55½	(sh) 1,297,847	N.P.	Sun Oil	‡25cQ	Dec. 16, 29	1,200	60	62	59¾	59¾	— ¼
110	110	105½	100	$5,000,000	$100	do pfd	$1.50Q	Dec. 2, 29	50	...	104	103½	103½	0
14¼	2½	24	5¼	(sh) 1,304,698	N.P.	Superior Oil Corp	....	Dec. 20, 20	24,100	7⅝	8½	7½	7⅞	+ ⅛
74¾	50	71⅞	50	$211,082,925	$25	The Texas Corp	75cQ	Oct. 1, 29	30,100	59¼	59¾	56⅜	56⅞	— 2½
26⅝	12⅛	23⅞	9½	8,380,340	10	Texas Pacific Coal & Oil	2½%s	Sept. 30, 29	9,000	11½	12	10¾	11¼	0
41½	19⅝	40	14	(sh) 2,179,275	N.P.	Tide Water Oil Co	20cQ	Sept. 30, 29	1,000	22⅛	22⅛	22⅛	22⅛	— ⅛
100⅛	86¾	97½	85⅛	$20,321,000	$100	do 5½% pfd	$1.25Q	Nov. 15, 29	600	87⅝	88½	87⅝	88½	+ ¼
25	14¾	23½	10	(sh) 4,877,976	N.P.	Tide Water Associated	....	Aug. 1, 27	48,600	44⅛	14½	12⅛	12¾	— 1⅜
91¾	81⅞	90⅞	74⅛	$72,989,200	$100	do pfd	$1.50Q	Oct. 1, 29	2,600	81	83	81	83	+ 1½
14½	6¾	15¼	5⅛	(sh) 3,842,029	N.P.	Transcontinental Oil	....	.....	72,600	9	9¼	8	8⅝	— ⅜
58	42¾	54½	42⅛	$40,858,375	$25	Union Oil of California	‡50cQ	Nov. 9, 29	5,200	47⅛	47⅞	45⅛	46¼	— 1⅛
128⅛	110	163¾	121⅞	31,101,200	100	Union Tank Car Co	$1.25Q	Dec. 2, 29	700	141¼	144	141	144	— 6
44⅞	26	42⅞	15	(sh) 488,359	N.P.	Warner Quinlan	50cQ	Oct. 1, 29	46,700	23½	24½	22	22½	0
38	20⅛	38	25	(sh) 490,000	N.P.	White Eagle Oil & Refining	50cQ	Oct. 21, 29	6,400	28½	28⅝	28	28	— 1½
22⅛	17¼	29¾	12⅞	(sh) 428,967	N.P.	Wilcox Oil & Gas	....	May 10, 28	3,000	15	16¼	14½	15⅞	+ ¾

*New High †New Low xEx-Dividends ‡Also Extras s-Stock Total Sales 1,399,410

Pittsburgh Stock Exchange

Transactions Week Ended Dec. 13, 1929

	Sales	High	Low	Last	Change
Ark. Nat. Gas	465	11¼	10½	10¾	— ½
do pfd	1,636	8⅛	8	8	0
Devonian Oil	860	11½	11	11⅛	+ ⅛
Lone Star Gas	7,335	39⅞	34¾	36	—3⅛
Lone Star pfd	365	105	104¾	105	0
Plymouth Oil	500	28¾	27½	27½	—1½
Pgh. Oil & Gas	1,510	3	3	3	— ¼
Salt Creek Cons.	510	2⅜	2¼	2⅜	+ ⅛
Shamrock O. & G.	1,185	17	x15½	15⅞	— ⅛

xEx dividend.

Pittsburgh Curb Market

Transactions Week Ended Dec. 13, 1929

	Sales	High	Low	Last	Change
Ark. Gas "A"	1,000	10½	10¼	10¼	...

RICHMOND, Va., Dec. 14.—A charter has been granted the Southern Service Station, Inc. of Charlottesville, Va., with maximum capital stock of $40,000, to deal in gasoline, oil and accessories. George E. Stephens, of Charlottesville, is president.

Atlantic Absorbs Red C

RICHMOND, Va., Dec. 14.—Beginning Jan. 1, Charlotte, N. C., will be headquarters for the Atlantic Refining Co.'s activities in the two Carolinas, according to announcement just made.

It was announced by an official of the Red C Oil Co., which operates on McNinch street in Charlotte, that this concern will be absorbed by the Atlantic on Jan. 1. The Red C now operates in Maryland, Virginia, West Virginia, North Carolina and several points in Pennsylvania.

The Atlantic company, it was stated, will transfer some of the accounting work now being done in Baltimore to the Charlotte office. With increased work at Charlotte, the office force will be augmented. Baltimore will be headquarters of the territory including Maryland, Virginia and West Virginia.

Oil Dividends

	Amount	Payable	Stock of Record
British-American q	25c	Jan. 1	.....
do extra	50c	Jan. 1	.....
Chestnut & Smith pfd. initial	$5.75	.....	Dec. 4
Darby Petroleum q	25c	Jan. 15	Dec. 31
Gulf Oil q	37½c	Jan. 1	Dec. 20
Indiana P. L. q	50c	Feb. 15	Jan. 24
do extra	25c	Feb. 15	Jan. 24
Lion Oil Refg. q	50c	Jan. 31	Dec. 27
Lone Star Gas q	20c	Dec. 31	Dec. 20
Shaffer Oil pfd. q	$1.75	Jan. 25	Dec. 31
White Eagle Oil q	50c	Jan. 20	Dec. 31

TULSA, Dec. 14.—Continental Oil Co. has purchased the one-tenth interest of the Bu-Vi-Bar Petroleum Co. in the Wright pool, north of Wichita, Kans. for a consideration reported to exceed $1,500,000. This company, headed by J. Garfield Buell, drilled the discovery well in the field on acreage pooled by the Continental and the Gypsy Oil Co.

Financial Notes

The Texas Corp.—$100,000,000 5 per cent debentures listed on New York Stock Exchange.

Phillips Petroleum Co.—264,249 additional shares of no par capital stock listed on New York Stock Exchange.

Union Oil Co. of California—41,801 additional shares of $25 common stock listed on New York Stock Exchange.

Chestnut & Smith Corp.—Initial dividend of $5.75 declared on 7 per cent cumulative preferred stock.

Superior Oil Corp.—Earnings of $2,762,936 before depreciation and depletion expired leases and federal taxes, reported for first 11 months of 1929 as compared with $605,432 in the corresponding 11 months of 1928. Company reports producing 4,079,976 barrels of crude in the 11 months this year as against 1,021,355 barrels last year.

Refiners Oil Co. Buys Alliance Company

CLEVELAND, Dec. 14.—The Refiners Oil Co. of Dayton, has purchased properties of the B. W. Thompson & Sons Co. at Alliance, Ohio, it was announced by W. H. Loviner, manager of the eastern division for the Refiners. The properties consist of a bulk station and three service stations. The Refiners company expects to enlarge its operations in Alliance and surrounding territory.

W. J. Thomas, formerly with the Thompson organization is to be manager for the Refiners at Alliance. Other members of the personnel also will be retained.

Since its organization 15 years ago the Refiners Oil Co. has extended its operations to all parts of Ohio, into eastern Indiana and northern Kentucky. The company now has more than 70 bulk plants and more than 400 service stations. It deals in fuel and industrial oils as well as gasoline, motor oils and greases. The company was the first to market Ethyl gasoline when it was developed.

The Refiners company has also erected a bulk plant at Columbus at Mound St. and the B. & O. railroad where it will blend oil to be distributed within a radius of 100 miles of Columbus.

CORRECTION

In the list of recent mergers, compiled by an oil association, and published in NATIONAL PETROLEUM NEWS, Nov. 20 issue, page 89 the statement that the Home Oil Co., Vicksburg, Miss., had sold out to the Lion Oil & Refining Co. was in error.

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Positions Wanted

MR. GENERAL MANAGER! Position wanted as SUPT. ENGINEER or MARINE SUPERINTENDENT for Tanker Fleet. Have thoro technical education and plenty of practical experience. Can cut costs and manage steamers efficiently. Address Box 459.

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graduate Chemist and Engineer with a record of achievements in construction and operation of complete refineries for all types of crude, successful in development of new premium branded oils, experienced in saleswork and lubricating engineering, aggressive and indefatigable, will consider executive position with large progressive concern.

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SALESMANAGER—Thoroughly capable mechanical engineer and oil man who can produce results, at present employed, wants to get with large progressive oil company as manager or assistant manager of railroad and / or marine sales. Address Box 461.

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Eleven years experience. Bulk and filling station operation, purchases, accounting, finances. Five years Public Accounting. Has operated own company. Thirty-seven years old. Desires new connection.

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LUBRICATING OIL SALES MANAGER:—Experienced and thoroughly conversant with organization and marketing refined oils and automotive and industrial lubricants. Can select, train and direct agents, salesmen and engineers. Am familiar with all types steam oils and can supply formulas for automotive and industrial oils and greases. Highest references as to character and ability. Address Box 464.

MARKETERS, ATTENTION!

PRACTICAL young executive, college trained (commerce), thoroughly conversant with marketing policies and practices applying to line company bulk and service distribution, wants connection with live growing organization.

Has good, clean five-year record of aggressive, progressive, successful field experience with large midwest independent; auditing, sales and operating departments; lastly, state supervisor eight million gallon territory. Salary secondary to future; "grief," hard work and responsibility invited. Locate anywhere.

Address Box 462

SALESMAN—desires position with steel drum manufacturer selling to the Petroleum trade in Eastern territory. Thoroughly experienced in selling. Address H. E. S. Room 1124, 342 Madison Ave., New York City.

Situations Open

SALESMAN WITH EXECUTIVE ABILITY, twelve years experience marketing high grade petroleum products, as well as supervising and managing filling stations and bulk plants, desires connection with opportunity to produce results. Thirty-eight years of age, married. Best references. Address Box 460.

Professional

L. G. Huntley J. R. Wylie, Jr.
Shirley L. Mason

HUNTLEY & HUNTLEY

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L. D. 186

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Standard Oil Stocks on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Outstanding Capital	Par Value	Stocks	Div. Rate	Last Paid	Transactions Week Ended Dec. 14 Sales	First	High	Low	Last	Change
22⅜	14⅞	18¾	14¼	£4,126,460	£ 1	Anglo-American Oil	36c	June 5, 29	.....	.....	.....	.....	.....	.....
21¼	15	18	13	.....	....	do certificates	36c	June 5, 29	69,300	16⅜	17¼	16⅜	16¾	+ ½
20½	14⅜	17	11	.....	£ 1	do ctfs. non-voting	36c	June 5, 29	12,100	16¼	17	16¼	16¾	+ ⅜
5	1¼	2½	.75	(sh) 500,000	N.P.	Atlantic Lobos	.....	.....	100	1	1	1	1	+ ¼
9¾	3½	4¼	1	$10,000,000	$50	do pfd	.....	.....	2,800	1⅜	1⅜	1⅜	1⅜	+ ⅛
56	44½	46½	25	$1,000,000	25	Borne-Scrymser	$1 S.A.	Oct. 15, 29	.....	.....	.....	.....	.....	.....
76	58	74¼	55	10,000,000	50	Buckeye Pipe Line	‡$1Q	Dec. 14, 29	800	69¼	69½	69	69	— ½
161	117¼	210	130	3,000,000	25	Chesebrough Mfg.	‡$1Q	Sept. 30, 29	100	150	150	150	150	—17¼
23	16	29	8⅛	36,123,350	10	Continental Oil	.....	Dec. 15, 27	3,800	16⅞	16⅞	16¼	16¼	+ ¼
17½	9½	11¾	5⅝	.....	N.P.	Creole Petroleum	.....	.....	39,100	6¾	6⅞	6⅝	6⅝	— ⅛
82	67	95	40	1,500,000	50	Cumberland Pipe Line	$1Q	Dec. 16, 29	.....	.....	.....	.....	.....	.....
88	64½	70½	42	5,000,000	100	Eureka Pipe Line	$1Q	Nov. 1, 29	50	49¾	49¾	49¾	49¾	— 4⅜
13	4¼	7	3⅝	16,000,000	100	Galena Signal Oil	.....	June 30, 25	100	4⅛	4⅛	4⅛	4⅛	— ½
86	26	90	73½	4,000,000	100	do new pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
89¾	35	88	73½	2,000,000	100	do old pfd	.....	June 30, 26	.....	.....	.....	.....	.....	.....
114¾	59¼	128	74⅛	73,685,700	25	Humble Oil & Refining	‡30cQ	Oct. 1, 29	4,500	93⅞	93⅞	85½	89⅛	— 4¾
290½	176½	340½	260	20,000,000	100	Illinois Pipe Line	$10S.A.	Dec. 16, 29	2,400	325	325	310	300	+ ¼
104	56¾	41	22	(sh) 26,421,768	N.P.	Imperial of Canada	12½cQ	Dec. 2, 29	4,800	29⅞	29⅞	27	27¼	— 1¾
91⅞	74⅝	41⅞	26	$1,000,000	$10	Indiana Pipe Line	‡50cQ	Nov. 15, 29	2,800	41	41⅝	40½	41¼	+ ¼
55	35	29⅜	15	(sh) 14,247,088	N.P.	International Petroleum	12½c	June 25, 29	17,800	24	24	21¾	22½	— 1
32⅜	19⅜	25⅞	10½	$6,363,350	12.50	National Transit Co	25cQ	Sept. 16, 29	3,900	22⅛	22⅞	21½	22⅞	— ⅛
75	38½	85	72	1,000,000	10	New York Transit	40c	Oct. 15, 29	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	....	do new	.....	.....	200	17	17½	17	17¼	— ½
69	56½	63	41	2,000,000	50	Northern Pipe Line	$2 S.A.	July 1, 29	250	52	52¼	52	52¼	+ ½
83½	58¼	79⅞	64⅛	60,000,000	25	Ohio Oil Co	‡50cQ	Dec. 14, 29	700	71½	71⅝	71	71⅜	+ ⅜
84	28	44½	20	10,000,000	25	Penn Mex. Fuel	$1	Dec. 14, 29	100	20⅜	20⅜	20⅜	20⅜	+ ⅜
220	167	50	33	4,000,000	25	Solar Refining	$1.25S.A.	Dec. 20, 29	100	34	34	34	34	0
19	12	23½	13	1,000,000	10	Southern Pipe Line	$1	Mar. 1, 29	100	13⅝	13⅝	13⅝	13⅝	0
71⅞	36¾	60¼	35⅛	30,000,000	25	South Penn Oil	50cQ	Sept. 30, 29	1,000	42	42⅛	41	41⅜	— ½
102	70	70	45	1,750,000	50	South West Pa. Pipe Lines	$1	Oct. 1, 29	.....	.....	.....	.....	.....	.....
95⅞	70⅞	63	45	348,175,069	25	S. O. Indiana	‡62½cQ	Dec. 16, 29	63,500	55¾	56⅜	54⅜	54¾	— ⅞
27¾	15	33¾	18	8,000,000	25	S. O. Kansas	‡50cQ	Dec. 16, 29	1,400	26½	26½	25	25	— 2⅞
49	44	46⅜	29	25,654,516	10	S. O. Kentucky	40cQ	Sept. 30, 29	3,800	37⅞	37⅞	35	35⅛	— 2½
54⅝	39⅞	50¼	40	4,649,225	25	S. O. Nebraska	‡62½cQ	Dec. 20, 29	100	43⅝	43⅝	43⅝	43⅝	+ ⅝
134	71	129	60	14,000,000	25	S. O. Ohio	62½cQ	Oct. 1, 29	200	86	86	85	85¾	— 3¼
125	116	124½	113½	7,000,000	100	do pfd	$1.75Q	Dec. 2, 29	.....	.....	.....	.....	.....	.....
23½	16	18	10	861,466	25	Swan Finch	30c	Jan. 15, 29	.....	.....	.....	.....	.....	.....
111	72	133¾	75	126,154,000	25	Vacuum Oil	‡$1Q	Dec. 20, 29	7,300	99⅝	101⅞	98½	100	+ 1

*New High †New Low ‡Also Extras

Independent Oils on New York Curb

1928 High	1928 Low	1929 High	1929 Low	Par Value	Stocks	Transactions Week Ended Dec. 14 Sales	First	High	Low	Last	Change
1½	.53	.72	.125	$5	Amer. Cons. Oilfields	3,600	1/16	1/16	⅛	1/16	0
9½	3⅛	8⅝	1⅛	N.P.	Amer. Maracaibo	2,900	1⅞	1⅞	1¾	1¾	— ⅛
4½	2¼	4¾	1⅛	$10	Argo Oil	100	1¼	1¼	1¼	1¼	— ¼
3¾	3⅜	26	3¾	N.P.	Arkansas Nat. Gas	9,600	11⅛	11⅛	9⅞	9⅞	— 1⅛
....	....	24¾	6½	N.P.	do A	17,500	10¾	10⅞	9⅞	10⅛	— ¾
.....	.....	9	4	10	do pfd	800	8	8⅛	8	8⅛	+ ⅛
55	32¾	70	50	N.P.	British American Oil	.....	.....	.....	.....	.....	.....
23⅞	3¾	4⅞	1	25c	Carib Syndicate	4,800	1⅛	1¼	1	1⅛	0
.....	.....	68⅛	20	N.P.	Cities Service new	142,700	30⅜	30⅜	27¾	28⅞	— 1½
103½	94½	99¼	84	100	do pfd	2,200	89¾	89⅞	89⅜	89½	0
9⅝	8⅞	9¼	8	10	do pref. B	.....	.....	.....	.....	.....	.....
97	88½	96	81	100	do pref. BB	300	81	82⅛	†81	82⅛	— 6⅞
2¼	1	1½	¼	1	Colombia Syndicate	18,100	3/16	½	1/16	3/16	0
17⅜	9¾	15	3⅞	N.P.	Colon Oil	4,700	6⅜	6⅜	5⅝	5⅝	— ⅞
8⅞	6¼	11⅛	2½	10	Consolidated Royal	2,500	4½	4½	4½	4½	0
....	....	135	42	N.P.	Cosden Oil Co	500	80½	84	80½	82⅞	+ ⅞
.....	.....	82	55	....	do pfd	400	58	63	58	63	+ 4¾
3¼	.76	2½	⅜	N.P.	Crown Central	8,400	5/16	5/16	†⅜	½	— ⅛
15	6¾	11¾	4	N.P.	Crystal Oil	.....	.....	.....	.....	.....	.....
50	48	51⅛	51⅛	$100	do pfd	.....	.....	.....	.....	.....	.....
33½	8⅛	26	6½	N.P.	Darby Petroleum	2,500	9⅛	9½	9	9⅛	+ ¼
2⅞	1	11	2	N.P.	Derby Oil & Refining	2,500	5¼	5⅜	4⅝	4⅝	— ⅝
21⅛	7½	44	5	N.P.	do pfd	.....	.....	.....	.....	.....	.....
165	101⅛	209	115	$25	Gulf Oil Corp	7,800	148	157	141½	143⅝	— 3⅜
7½	5⅜	7½	1⅜	5	Homaokla Oil	1,300	3⅞	3⅞	3¾	3¾	+ ⅛
....	....	49¼	5	$1	Indian Territory	9,800	24⅛	24⅝	21⅛	22⅝	— 1⅞
3⅜	1	2⅞	⅜	10	Intercontinental Pet.	8,200	1⅛	1¼	¾	1¼	+ ⅛
3	¼	3⅝	1¼	N.P.	Kirby Petroleum	.....	.....	.....	.....	.....	.....
9⅜	5⅛	6½	2	N.P.	Leonard Oil & Dev	8,800	2⅛	2¼	2	2	— ⅛
43⅜	20	38⅞	18	N.P.	Lion Oil & Refg.	2,700	22¾	22¾	21½	21½	— ⅞
....	....	67⅞	28	N.P.	Lone Star Gas	3,900	39¼	39⅞	34⅛	36	— 3½
1⅞	.50	1¼	¼	1	Magdalena Syndicate	2,300	¼	5/16	¼	5/16	+ 1/16
48½	32	38½	15	N.P.	Margay Oil	.....	.....	.....	.....	.....	.....
8	2¾	6⅜	2½	N.P.	Mexico-Ohio Oil	900	2½	3⅛	2½	3¼	+ ¾
....	....	42	8	N.P.	Missouri-Kan. P. L.	8,400	18⅜	19½	18	19½	+ 1½
1¾	.76	1½	¼	1	Mountain & Gulf	1,800	½	⅝	½	⅝	— ⅛
28⅞	19½	22⅞	7	10	Mountain Producers	5,100	10⅛	10⅜	9⅛	9⅛	— 1
.....	.....	43⅞	24	N.P.	Nat. Fuel Gas (new)	1,700	27¾	27¾	26¾	26¾	— 1¼
5⅝	4¼	5	2¼	5	New Bradford	300	3⅛	3¼	3	3	— ¼
5½	3	3⅞	2¾	10	New England Fuel	200	3	3	3	3	0
11⅞	7⅛	9⅜	2¼	1	New Mex. & Ariz.	900	3½	3⅞	3⅛	3⅛	— ⅜
15½	11½	24½	11⅛	25	New York Petrol	300	15¼	16⅜	14⅝	16⅜	+ ½
13¼	8⅛	18½	6⅛	N.P.	North Cent. Texas	300	8⅛	9⅛	8⅛	9	+ 1
....	....	19¼	8⅛	N.P.	Oil Stock, Ltd. A	1,200	10⅜	10⅜	9½	10	— ⅜
.....	.....	18¼	10	N.P.	do B	100	11	11	11	11	0
26¼	20	26⅝	12⅝	N.P.	Pacific Western Oil	700	15	15⅛	15	15	— ½
6	2¼	3½	½	N.P.	Pandem Oil	900	¾	¾	5/16	11/16	0
15⅝	8½	10½	2⅜	N.P.	Pantepec Oil	200	3¼	3¼	3	3⅛	0
20	10⅝	25½	22½	$25	Paragon Refg. B. ctfs.	.....	.....	.....	.....	.....	.....
.....	.....	34½	17	N.P.	Petroleum Corp	1,600	23¼	23⅞	21⅛	22	— 1½
31⅜	26½	37	22	N.P.	Plymouth Oil	200	28⅞	28⅞	27⅝	27⅝	— ⅜
18	8	16	9⅝	25	Red Bank Oil	100	9⅝	9⅝	9⅝	9⅝	0
13	4⅛	8½	1⅛	N.P.	Reiter-Foster	3,000	3⅛	3¼	3	3	— ⅛
31½	23¼	25½	19	$25	Richfield pfd	.....	.....	.....	.....	.....	.....
.....	.....	29	17	....	Root Refining pfd	.....	.....	.....	.....	.....	.....
12	4⅜	11	3	N.P.	Ryan Consolidated	300	4⅛	4⅛	3⅞	3⅞	— ¼
7¼	5½	5⅞	1⅞	$10	Salt Creek Cons	200	2¼	2¼	2¼	2¼	0
35	23¼	25⅞	9	10	Salt Creek Prod	4,000	12⅞	12⅞	11⅜	11⅜	— 1⅜
3½	1	2½	½	5	Savoy Oil	200	1⅜	1⅜	1⅜	1⅜	0
40	27	33⅛	10	25	Shreveport El Dorado	200	10	10	†10	10	0
....	....	24	11⅛	N.P.	Southland Royalty	3,700	12	13	11¾	12⅞	+ ⅞
....	....	12	4	N.P.	Sunray Oil	2,800	7¾	7¾	6	7⅜	— ⅛
.....	.....	23	7⅛	N.P.	Texon Oil & Land new	400	10	10¼	10	10	— 2
22⅞	13	16⅞	11⅝	$10	Tidal Osage	.....	.....	.....	.....	.....	.....
21¼	13⅛	16½	10⅛	10	do not-voting	.....	.....	.....	.....	.....	.....
93¾	75	155	80	100	Transcontinental pfd	.....	.....	.....	.....	.....	.....
74¼	18	81⅛	66	10	Venezuela-Mexico	200	77½	77½	77½	77½	0
9⅛	4¾	6½	1⅜	3	Venezuelan Petrol	14,800	2½	2⅝	2¼	2¼	— ⅛
.....	.....	72¼	66	N.P.	White Star Oil	.....	.....	.....	.....	.....	.....
8¼	4⅞	9⅛	2	1	Woodley Petroleum	200	3¼	3¼	3¼	3¼	0
⅜	1/16	5/16	½	25	Y Oil & Gas	100	¾	¾	¾	¾	— ⅛

*New High †New Low

New York Curb Bonds

Week Ending Dec. 13

	High	Low	Last	Change
Beacon Oil 6s '36	105	103½	105	+1⅞
Cities Service 5s '66	84⅝	83¾	84⅜	+ ⅜
Cities Service G. 5½s '42	86¾	86	86¾	+ ⅜
Cities Serv. G.P. 6s '43	92¼	92¼	92¼	— ¼
Cities Serv. P. 5½ '52	90⅜	87¾	87¾	—2¼
Cont. Oil 5½s '37	93⅞	92½	92¾	+ ¼
Empire O & R 5½s '42	86½	86	86	— ½
Gulf Oil 5s '37	101	100	100	—1¼
Gulf Oil 5s '47	101½	100⅛	101⅛	— ⅛
Independent Oil 6s '39	103⅞	102⅝	102⅝	— ¼
Shell Union Oil 5s '49	99	98	98½	— ¼
Sun Oil 5½s '39	101½	100½	101⅛	+ ⅝
Valvoline Oil 7s '37	103	103	103	+ ¼

New York Bonds

Week Ending Dec. 13

	High	Low	Last	Change
Asso. Oil Gold 6s	102	101¾	102	0
Atlantic Refg. deb. 5s	102	101	101	—1
Cal. Pet. 5s	95	94⅛	94⅛	— ⅜
Cal. Pet. 5½s	99	98	98	—1⅛
General Pet. 5s	102½	101	102	— ⅛
Humble Oil & Refg. 5s	101	100	100	— ¼
Humble Oil & Refg. 5½s	101¾	101¼	101⅝	— ⅜
Pan. Amer. P & T 7s	104½	104½	104½	0
Pan Amer. P & T 6s	105	103⅛	103⅛	— ⅝
Pan Amer. P & T 6s	95½	95	95	— ¾
Phillips Pet. 5½s	93	92	92¼	— ½
Pure Oil 5½s	100¼	99⅞	100	+ ⅛
Richfield Oil Calif. 6s	99	98½	99	+ ½
Shell Union Oil 5s	96⅜	95	96	+1
Sinclair Con. Oil 7s	102	101¼	101¼	0
Sinclair Con. Oil 6½	100¾	100	100⅛	— ¼
Sinclair Con. Oil 6s D	99⅞	99¾	99⅞	+ ⅛
Sinclair Con. Crude 5½s	97½	96½	97	0
Sinclair Pipeline	95	94½	94¾	— ¼
Skelly Oil 5½s	95	93½	94	—1
S. O. N. J. 5s	103¼	102½	102¾	— ¼
S. O. N. Y. 4½s	97½	96⅝	97	0
Transcontinental Oil 6½s	99½	98	98½	— ½
Union Oil of Calif. 5s C	98	98	98	—1
Union Oil of Calif. 6s A	107	106½	106½	— ⅞
Union Oil of Calif. 1st. 5s A	98	98	98	+1
Warner-Quinlan 6s	89	87	88	0
White Eagle Oil 5½s	War. 100	100	100	⅛

Cleveland Stock Market

Dec. 13	Par Value	Bid	Asked
Canfield Oil Co	$100	100	135
do pfd	100	102	...
Fred G. Clark Inc	10	10½	11
National Refining Co	25	34	34½
do pfd	100	132	...
Paragon Refining Co	25	9⅞	10
do pfd	N.P.	35	41
do ctfs	...	10	10½